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# Textile World

VOL. 87, NO. 5—ESTABLISHED 1868

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# Cleaning Simplified

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Textile World

April, 1937

*Editor:* DOUGLAS G. WOOLF

# *Performance . . . and a Pledge*

WE have been with this industry during many a strike threat and many an actual strike, but we have never seen it handle itself better than it has during the last month, in the face of the new-born CIO textile campaign. Probably one reason we think so well of this performance is the fact that it follows so closely the specifications we set down in these columns last month.

We urged, first, that the industry continue to maintain its then-current sound labor standards. The industry not only "saw" us on this but raised us one. The wage advance which was put into effect in most sections of the country represented the best form of defense.

In that same specification we also urged that those few manufacturers who had "stepped off the reservation" get back again promptly. News items of reduction in shifts from 50 to 40 hours in certain cases represent this sort of action.

NEXT, we urged that the industry use every legitimate means to tell its labor story to the public. Our desk bears evidence that there is an increasing attempt to do that very thing. State textile associations seem to be in a particularly advantageous position to conduct such an activity. As we stated last month, this is a story to be proud of—and is getting more so all the time.

Finally, we urged the industry to "keep its shirt on." After an initial and quite natural case of the jitters when the news first broke, a calm attitude began to prevail. There has been a notable absence of fighting words which too often set a background of bitterness, difficult to remove later on. It would be particularly uncalled for right now, since, as we try to point out in an article on page 108 of this issue, there apparently is no likelihood of a general textile strike, at least in the near future.

AN important contribution to industry-thinking on this subject was made by Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, in an address at Chapel Hill, N. C., late last month.

"We (the textile industry) will not organize against the CIO threat," he said "but we will continue the policy of concentrated action with respect to improved wages, shorter working hours, elimination of child labor, establishment of a code of fair trade practices, all of which look to the greater stability of the industry and a return to prosperity."

That kind of offense—to repeat—is the best kind of defense. That is the sort of "concentration" which benefits both employers and employees.

The Doctor was merely pledging a continuation of the campaign that has long been under way. That is the type of program the industry has been conducting for years; by so doing it has gained a new place in public esteem.

Dr. Murchison's pledge for the future was justified by past performance.

# The Editor Says

## Green and the Sit-Down

WE have expressed ourselves rather forcefully on the subject of the sit-down strike, and consequently our readers know that we agree with the general criticism of that method, voiced by William Green, president of the A. F. of L.

Nevertheless, at the same time, we cannot help being amused. Mr. Green can get all hot and bothered about this, when the politics of organized labor make it advisable. And yet, during the 1934 strike, the same William Green didn't so much as peep about the flying squadron tactics of one of his subordinates, Francis Gorman.

This reflects exactly, we believe, the real reason why the organized labor movement in this country has not gained the respect and confidence of the country as a whole: because of its complete lack of any fundamental policy. Instead of having yard-sticks against which it measures all the performances of labor groups, it flits from one standard to another, as expediency dictates.

Until that situation is changed the American labor movement will continue to be largely a means by which a few individuals make some money.

## Modernization . . . and Research

IN our Annual Review and Forecast Number, we ran a symposium of opinions from readers on: "What the industry must do to preserve the new profit era in textiles." The following statement, from Leon H. Ryan, general manager of the Delaware Rayon Co., New Castle, Del., arrived too late for that issue:

"For several years, because of financial conditions, it has been impossible for many textile plants to purchase badly needed equipment. It has been necessary, in order to meet competitive prices, to cut production costs in some cases to a point where the cloth suffered and buyers were dissatisfied.

"With the textile industry in a better earning position, part of those earnings should be diverted to the purchase of new and modern equipment and to research and study that will lead to better textiles.

"While many of the production methods developed over the past few years have resulted in increased output per unit and reduced costs, some of them deserve greater study to improve quality.

"The outlook for the textile industry appears to be the same as all others—greater production at reasonable prices—but we must never lose sight of the fact that a definite percentage must be on a quality basis if the wishes of the consumer are to be met."

. . . And here is a contribution on the same subject from Robert A. C. Scott:

"I was very much interested in the question "What must the textile industry do to preserve the new profit era?" The majority opinion advocated the continuance of the 40-hour week, decent wages, and avoidance of the third shift. With this I entirely agree, but I am not sanguine enough to imagine for one moment that these three points alone constitute an impregnable defense against future industrial decay. . . .

"What is required is a higher standard of efficiency in management, departmental supervision, costing, market representation, help, and machinery. Let the textile industry strengthen its foundation by recognizing merit and good character rather than friendship and I venture to predict that better labor and wage conditions will follow as a natural sequence. Until the responsible parties realize the importance and necessity of employing competence in place of personality, experience in place of influence, and proficiency in place of the general practice of muddling through, then, and then only, can we look for that 'consummation devoutly to be wished.'

"Consequently I consider 'efficiency' of greatest importance in preserving the new profit era."

## Committee D-13

LAST month's meeting of Committee D-13 of the American Society for Testing Materials was noteworthy for several reasons. It gave well-merited honor to Prof. George B. Haven. It brought back into the fold some of the old-timers who have been absent too long — E. D. Walen, of Pacific Mills, for example. It introduced new blood into the committee in the form of Dr. A. C. Walker, of the Bell Telephone Laboratories, whose talk at the papers session was one of the most important contributions in D-13 history.

This committee continues to do a necessarily unspectacular job in a splendid manner. Everybody from the chairman on down through all the officers and members of sub-committees and sections, seems imbued with the necessity of hard work and sincere effort. Committee D-13 has deserved the remarkable growth it has experienced in a relatively few years; it deserves the further support and cooperation of the mills which have not yet exposed their technical men to this vital undertaking.

## An Important Event

CO-SPONSORED by the five leading technical associations in the textile industry, the National Rayon Technical Conference to be held in Washington May 14 and 15 is of great potential importance. It will bring together all groups of technicians, including engineers, chemists, physicists, and research men.

Directed specifically to the question of how the various branches of the industry can contribute to the further improvement of rayon yarns and fabrics, this conference may prove to be the forerunner of a series of annual technical meetings of a similar nature for the discussion of other textile problems. While such a conference cannot take the place of the regular meetings of the co-sponsoring organizations, it can well be a valuable supplement to them and become a clearing house for exchange of ideas between all who are contributing to the technical advancement of the industry.

Executives should see that their technical men attend this conference.

## Knitting Show Section

***Beginning on page 129 of this issue is a special section devoted to the Knitting Arts Exhibition, which opens in Philadelphia on April 19. It includes TEXTILE WORLD'S Guide to Exhibits and a group of articles dealing with the technique of knitting.***

# *Genuine Recovery in Cottons*

## Statistics show 1936 on par with 1929 on salient items

THE sixth annual survey by the Association of Cotton Textile Merchants of New York starts with 1927, extends through the depression and concludes with a period of genuine recovery in 1936, supported by most favorable prospects for 1937. Details appear in the table below.

The dominating influence in the progress of the cotton textile industry last year, according to W. Ray Bell, president of the association, was the continuous strength of demand forces.

Domestic consumption of raw cotton for the calendar year increased about 25.7% over 1935, to 3,463,528,000 lb. Excepting the 1927 record of 3,587,733,000 lb., this was the highest domestic consumption figure for the last fifteen years. To domestic cotton growers, this performance in the face of reduced consumption of American cotton abroad, has been most important, not alone in providing a broad market but in preserving fair values for their product.

Employment records, based on Bureau of Labor statistics, indicate that the 1929 figures were surpassed during the last half of 1936 both in volume of employment and hourly earnings per employee. Current statistics show over 450,000 workers employed, against the March 1929 level of 437,000, which was the highest for that year.

Credit for these notable accomplishments, must go to a shrunken industry since even favorable economic conditions failed to halt the tide of spindle contraction which started in 1925. During 1936, the net loss was 1,553,250 spindles, bringing total installed equipment to a new low of 27,700,194. Another 600,000 spindles have been junked in two months of 1937. The current record of 27,103,076 spindles in place on Feb. 28, 1937, barely exceeds the 1907 figure of 26,939,415 as of Aug. 31. In the intervening 30 years, 12,000,000 spindles have come and gone.

New spindleage installed during the year was exceeded in recent years only in 1927 and 1934. This was largely for replacement purposes. Of the existing industry around 3,236,000 spindles date within the last ten years. This is barely 12%. Should present improvement continue substitution of new machinery for old will assume large proportions.

Although the average number of active spindles over the twelve months was the lowest of any recent year, save 1932, there was a marked decline in those operated intermittently. These represent marginal units which operate only under propitious conditions. That practically all of them have now come back into operation is indicated by the current report of 24,536,254 active spindles for February 1937. This figure almost coincides with the total number active at any time during the year ended July 31, 1936. Idle spindleage has been reduced to about 2,500,000 or 10½% of the total in place, at present. Many of these have been dismantled and it is doubtful that over a half million can be revitalized. Thus practical operating units, including intermittents, would comprise 25 million spindles. Active spindle figure for 1906 was 25,250,096 when the consumption of cotton was barely 5,000,000 bales against over 7,000,000 bales last year.

Such comparison emphasizes the evolution of the industry from single shift to double shift standards, with a steady decrease from a maximum of 66 hr. per shift to the present standard of 40 hr. With most units on this basis, the 1936 demand drew forth a total of 91,773,252,676 active spindle hours, or 3,926 hours of work per year for each of the average number of active spindles. This sets a new record for intensive operation and gives further definition to the reversal of market conditions.

## TEN YEARS OF COTTON TEXTILES

Data assembled by The Association of Cotton Textile Merchants of New York from Bureau of The Census reports and information obtained through the courtesy of machinery manufacturers. Cloth production for the non-census or even years and for 1935 has been estimated to correspond to spindle hour activity during the preceding census years.

| | 1927 | 1928 | 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | 1935 | 1936 | 1937 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **EQUIPMENT** | | | | | | | | | | | |
| Spindles in place at beginning of year | 37,364,730 | 36,465,976 | 35,267,086 | 34,541,486 | 33,608,494 | 32,326,526 | 31,442,1[illegible]4 | 30,938,340 | 30,889,484 | 29,253,444 | 27,700,194 |
| Increase or decrease from preceding year | 507,206 | 898,754 | 1,198,890 | 725,600 | 932,992 | 1,281,968 | 884,352 | 503,834 | 48,856 | 1,636,040 | 1,553,250 |
| New installation, additions and replacements | 496,192 | 255,912 | 320,784 | 251,936 | 205,068 | 143,908 | 348,568 | 529,840 | 214,874 | 469,316 | |
| **OPERATION** | | | | | | | | | | | |
| Spindles active at any time during year ending July 31st | 34,409,910 | 33,569,792 | 32,417,036 | 31,245,078 | 28,979,646 | 27,271,938 | 26,894,860 | 27,742,462 | 26,700,946 | 24,664,428 | |
| Spindles idle during same period | 2,954,820 | 2,896,184 | 2,850,050 | 3,296,408 | 4,628,848 | 5,054,588 | 4,547,314 | 3,195,878 | 4,188,538 | 4,589,016 | |
| Average number of active spindles based on twelve monthly reports | 32,547,119 | 29,961,648 | 30,408,548 | 27,269,470 | 25,674,107 | 23,250,757 | 24,873,270 | 25,119,435 | 23,421,150 | 23,373,147 | |
| Intermittent spindles (being the difference between average active spindles and those active at some time during year) | 1,862,791 | 3,608,144 | 2,008,488 | 3,975,608 | 3,305,539 | 4,021,181 | 2,021,590 | 2,623,027 | 3,279,796 | 1,291,281 | |
| Percentage relation of average active spindles to spindles in place | 87.11% | 82.16% | 86.22% | 78.95% | 76.39% | 71.92% | 79.11% | 81.19% | 75.82% | 79.9% | |
| Spindle hours run | 104,450,215,778 | 92,728,880,678 | 99,899,724,476 | 76,702,655,168 | 77,793,298,853 | 70,218,347,911 | 86,580,232,828 | 75,711,412,882 | 76,017,361,934 | 91,773,252,676 | |
| Hours run per average active spindle | 3,209 | 3,095 | 3,285 | 2,813 | 3,030 | 3,020 | 3,481 | 3,014 | 3,246 | 3,926 | |
| **MARKET** | | | | | | | | | | | |
| Production in square yards | 8,980,415,000 | 7,972,551,000 | 8,541,546,000 | 6,558,154,000 | 7,141,904,000 | 6,446,466,000 | 8,088,846,000 | 7,072,960,000 | 7,101,542,000* | 8,573,457,000* | |
| Exports in square yards | 565,021,000 | 546,847,000 | 564,444,000 | 416,285,000 | 366,959,000 | 375,446,000 | 302,042,000 | 226,306,000 | 186,565,000 | 200,501,000 | |
| Imports in square yards | 63,002,000 | 61,295,000 | 61,185,000 | 35,517,000 | 34,732,000 | 29,436,000 | 41,348,000 | 41,533,000 | 63,674,000 | 114,186,000 | |
| Available for domestic consumption | 8,478,396,000 | 7,486,999,000 | 8,038,287,000 | 6,177,386,000 | 6,809,677,000 | 6,100,456,000 | 7,828,152,000 | 6,888,187,000 | 6,978,651,000* | 8,487,142,000* | |
| Population at July 1st | 118,197,000 | 119,798,000 | 121,526,000 | 123,091,000 | 124,113,000 | 124,974,000 | 125,770,000 | 126,626,000 | 127,521,000 | 128,429,000 | |
| Available for per capita consumption in square yards | 71.73 | 62.50 | 66.14 | 50.19 | 54.87 | 48.81 | 62.24 | 54.40 | 54.73* | 66.08* | |

* Estimates Based on 1935 Census Relationship.

# *TWOC...*

## Hillman makes peaceful start—Industry steals thunder by wage advances

By Douglas G. Woolf
*Editor,* TEXTILE WORLD

THE textile industry is becoming sort of used to T.W.O.C.—Textile Workers Organizing Committee, in full.

When the news first broke that the C.I.O. was about to turn its attention to textiles, things were moving fast. John L. Lewis seemed to be taking an industry a day in his stride. No wonder, then, that textile manufacturers immediately conjured up a mental picture of this bushy-browed knight of labor planting his flag on the roof of every textile mill in the country. So great was the magic of his name, temporarily, that intention was at once accepted as accomplishment.

Since then this vision has faded. The brilliance of Lewis's aura has been dimmed somewhat. He is no longer quite the fair-haired boy he was. True, he is still regarded as the dominant personality in the labor field, and his C.I.O. is very definitely becoming the tail that wags the dog—the dog being the A. F. of L., of course. In fact, William Green, president of the latter, is today probably about as pathetic a figure as can be found in the country.

Nevertheless, Lewis is no longer regarded as a magician. His apparent mastery of the automobile situation, for example, was followed almost immediately by strife and bitterness which, as we write this, continue to exist. It is even being hinted that Lewis is not a master strategist—but rather an opportunist.

However, he has on his staff—in fact as his chief of staff—a man who is conceded to be an able strategist. We have been told Sidney Hillman has been heard to refer to John L. Lewis as "my minister of war." Whether that's true, or merely idle gossip, it infers, rather accurately we believe, the relationship between the two men.

And Hillman, the strategist, is the man in charge of the textile campaign—chairman of T.W.O.C.

Why then is the industry less agitated than it was a month ago?

### General Strike Not Imminent

Primarily, we believe, because the threat of a general textile strike, at least in the near future, has been averted. That threat, in fact, was an imaginary one. It was another one of those nightmares evoked by the Lewis legend. The immediate reaction of every textile manufacturer was to expect an industry-wide strike within the next month or two. They can hardly be blamed for this, in view of their past experience with Francis Gorman. But Hillman plays a different game.

One of his first public statements after assuming the chairmanship of T.W.O.C. was that his aim would be to avoid industrial strife. He was very evidently promising to bury Gorman and all his works when he said that the unionization campaign would be "conducted in an orderly, disciplined and responsible fashion." That, of course, describes exactly the way in which Gorman's campaign was *not* conducted. In fact, it is apparent that Hillman recognizes as his first job the necessity of taking the "bad taste" out of the industry's mouth, left there since the shameful days of September, 1934.

All of which, obviously, is reassuring to an industry which had started to gird its loins for a battle royal. It seems that there isn't going to be any fight today.

However, this writer would suggest that the industry hold on to its rain-check. We agree that a general strike is not imminent, and we would be surprised to see one for at least a year. However, even though probably remote in time, it is not remote in possibility.

There is as much danger, now, of under-estimating Hillman's ability as a fighter, as there was a month ago of over-estimating his eagerness to plunge into an actual fight. Those who have followed his career in the clothing field testify to his capacity as a militant labor leader, when and if the situation demands militant tactics. When he stated that the T.W.O.C. "pledges itself to spare no effort until it has achieved its goal of a new day for the textile industry and for the millions of working people who depend upon it for their livelihood," and that the T.W.O.C. "has set itself the immediate task of building a substantial, effective and permanent organization for collective bargaining, which will be truly representative of the textile

***SIDNEY HILLMAN, chairman of the Textile Workers Organizing Committee, has been active in the American labor movement for more than a quarter of a century. Born in Russia in 1887, he came to the United States at the age of 20. He was working as a cutter in the Hart Schaffner & Marx clothing plant in Chicago when the bitter clothing strike of 1910 broke out there. He took a leading part in the formation of the impartial arbitration machinery plan installed in that plant in 1911. When the Amalgamated Clothing Workers of America was formed in 1914, Mr. Hillman became general president and has continued in that office up to the present time. He is also treasurer of Labor's Non-Partisan League, a member of the National Youth Administration and a member of the advisory board of the U. S. Employment Service. During the NRA, he was a member of the Labor Advisory Board. He was appointed by the President as one of the five members of the National Industrial Recovery Board, when that board was formed in 1934, and served until the invalidation of the NIRA by Supreme Court. Adjacent picture was taken at that time.***

workers of the country," he certainly wasn't talking as a pacifist.

All of which boils down to about this: The textile industry can expect a far more intelligent and effective labor leadership than it has ever had in the past. It does not need to anticipate an early general strike. Instead, there will probably be scattered strikes—some to meet particular situations, and others of the "warning" variety. It also does not need to fear the return of the "flying squadron"—the monstrosity of 1934; Hillman definitely declared thumbs down on this instrument of torture, in an interview with a McGraw-Hill representative. Whether he believes in the sit-down strike this writer does not know.

His plan will be not one of concentration, but rather one of securing separate agreements with individual companies as he progresses with his campaign. In the selection of these individual companies for attention, Hillman will undoubtedly show his greatest ability as a strategist. There is not apt to be anything indiscriminate about that.

Beyond this, the industry can look to the eventual probability of a general textile strike, *after* Hillman has a much larger nucleus of membership than he inherited from the U.T.W., and *after* he finds out that organizing a decentralized industry by separate agreements isn't such a soft job.

As to Hillman's "demands," the best judgment is that he is not too much concerned about getting a 30 or 35 hour week—but rather that consolidation of the gain represented by the 40-hour week will be one of the objectives. He himself said to a *Business Week* representative: "I never have been much of a believer in the idea of setting up 'demands' at a high peak, to use in bargaining for one's real objective, which may be much lower. We are trying to make an honest appraisal of what the employer can pay, and from that expect to reach a fair estimate of what labor should receive."

Those are brave words. However, once again, this writer suggests that they be taken with a grain of salt. That is what might be called a strategic statement. We imagine that Hillman can do a little trading with the best of them, when occasion arises.

### The T.W.O.C. Set-Up

From the standpoint of labor organization, the new set-up is swell. The Textile Workers Organizing Committee has swallowed the United Textile Workers of America as completely as any cat ever swallowed a canary. The new committee has full authority and power:

A. To administer outstanding and existing contracts between members and the U.T.W., or any of its affiliated federations or locals.

B. To handle all matters relative to the organizing campaign to be instituted on behalf of all the textile workers of this country.

C. To fix the initiation fees and dues for all new members, and to grant dispensation from the payment of initiation fees or dues for present members, and to require, if it so determines, that all initiation fees or dues that may come into the U.T.W. from any other source, shall be turned over to the Textile Workers Organizing Committee for campaign purposes.

D. To deal with employers of textile workers and execute agreements on an industry, employer or any other basis in the discretion of the T.W.O.C.

And just to make the party complete, the agreement includes the following clause:

"The U.T.W. shall turn over its funds to the T.W.O.C. to be used in the organizing campaign. The several officers and agents of the U.T.W. shall place themselves under the jurisidiction and orders of the T.W.O.C."

One of the nicest little ways to run a show is to have the other party to an agreement "turn over its funds."

On the personnel side, the T.W.O.C. has some strong individuals. Hillman, as noted, is chairman, Thomas Kennedy of the United Mine Workers, is secretary-treasurer—and the members include Emil Rieve, president of the American Federation of Hosiery Workers and vice-president of the U.T.W.; Charles Weinstein, of the Amalgamated Clothing Workers; T. F. Burns, of the United Rubber Workers; and John Brophy, director of C.I.O. Gorman is also on the committee.

The hook-up with the apparel unions is one of the strongest features of the set-up. It foreshadows a vertical union, eventually, which will cover the textile and apparel fields, with proportionately greater financial resources and bargaining power. Anyone who overlooks the significance of this phase is missing a bet.

From an organization standpoint the country thus far has been divided into seven regions for the textile union campaign: New England, with headquarters at Boston; Northern New Jersey, at Passaic, N. J.; Northern New York State, at Rochester, N. Y.; Middle Atlantic, at Philadelphia; Upper South, at Roanoke, Va.; Deep South, at Atlanta, Ga.; and Middle West, at Chicago.

### "TWOC"

***INTRODUCING a new one: TWOC. This, as all except the most gentle readers must know by this time, stands for the Textile Workers' Organizing Committee, the CIO group which supersedes UTW in the textile field. It has one advantage: it can be used as a pronouncable word, even if it does sound a little like baby talk. In fact, when Sidney Hillman is through with it, we may suggest that he submit it in TEXTILE WORLD'S still-open contest for a new name for staple fiber. A lot of the entries are worse than TWOC. In fact, every time we say it to ourself, we like it a little more. It sort of fascinates us. . . . However, we'll try not to become a bore on the subject. — Editor.***

### The Industry's Answer

This story would end here if the textile industry had not taken the ball away from the T.W.O.C.—and furnished the real news of the month. The wave of wage increases—averaging 10%—which swept practically all branches of textile manufacture represented the second such advance in less than six months and established the return of real prosperity to textile workers that much more firmly.

That this move still further complicates the already difficult job which T.W.O.C. faces is putting it mildly. The bill of goods that committee has to offer textile workers doesn't sell itself very readily. With employees enjoying better than pre-depression conditions, the invitation to invest dues in a union card has limited pulling power. And even if payment of dues is deferred until 60% of the workers of a given plant shall have joined the fold, the initial response to such an invitation is apt to be "So what?"

The other side of this picture, of course, is that while prosperity makes workers less anxious to join a union, it also makes employers less keen about losing production through strikes, and therefore possibly more willing to compromise. In fact, one of the nicest little subjects for debate is whether good times or bad help the cause of a strike.

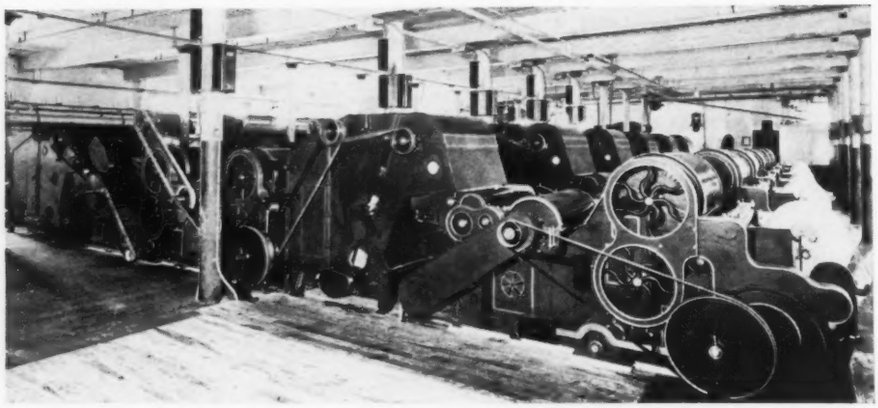
However, for the time being, that's an academic question in textiles. There is no strike—at least not much more than the normal number of disorders.

For the moment, there is only the T.W.O.C. And if there is one general impression this reporter has gained from his contacts in the field, it is an agreement that, after all, the textile industry couldn't lose by a change in labor leadership. It just couldn't get a worse deal than it had before.

Which isn't a bad position to be in.

**Some high spots in development of today's**

# *Cotton-Spinning Methods*



*Single - process picking has afforded improvement in evenness of laps; saving in floor space and power; and except in very small installations, saving in labor.*

**By James L. Truslow**
*Whitin Machine Works*

ABOUT 1922 the attitude of the mills and of the machinery builders was perhaps a little complacent. Prosperity had been the rule for a number of years and, as always seems to be the case, this had discouraged the intense self-criticism which results in research and the development of new machines and methods. The art of cotton spinning had been pushed to a high level by a century and a half of invention and refinement. It seemed unreasonable to expect any speeding up of design change. In spite of all this, the fifteen years between then and now have seen greater advances than any similar period since the heroic age of Arkwright.

Now that prosperity has returned for a while to the cotton industry, we find a minority of progressive mills far in advance of average practice. We find the rank and file hurrying to buy the machines which their more alert competitors have already installed. If history is to repeat itself, we should now expect a period of digestion while the main body of the industry catches up with its leaders and the machinery builders are too much occupied with delivery schedules to spend much effort on new design. To my mind, the only likely exception to this general, temporary pause might be in connection with a certain new and unpredictable factor —the possibility of radical change in the raw material used by the cotton mills.

The last few years have seen the arrival of synthetic fiber cut into staple lengths. Under various trade names, it is being spun in amazing quantities by cotton mills all over Europe and, to a less but growing extent, by mills in this country. It has the great advantage of uniform and controllable fiber length. It is easier to run on cotton machinery than cotton itself. Speeds can be higher and processes fewer when it is used. It has only two serious disadvantages. It is still lacking in certain fiber qualities, such as wet strength, and it still costs much more than cotton. Many people believe that the first difficulty will be overcome as a result of research by the great rayon companies and that the drawback of cost will disappear as mass-production processes are developed for its manufacture. If these obstacles should be overcome, cut-staple fiber might replace cotton to a considerable extent. In that case, there would undoubtedly be a great many new types of machine developed to process the new raw material to best advantage.

### Raw Cotton Improvements

Most people have at least heard of cut rayon, but many do not know that cotton itself is changing and improving. In this country, concerted action by government agencies, cotton planters, and cotton spinners has improved the length and uniformity of the staple in many localities. The recognition that fineness of fiber diameter is an important quality has led to breeding experiments which may have important results.

I have mentioned the advances made in the design of cotton spinning machinery during the last fifteen years. I should now like to contrast in some detail the various departments of an up-to-the-minute mill in 1937 with what we should have found before these improvements were introduced.

Starting at the raw-material end of the mill, the first thing which should be considered is adequate blending of the cotton. According to the old practice, a relatively small number of bales would be laid out on the floor of the opener room; and the operative would be expected to take a layer from each bale in turn and feed the hopper of the bale breaker. Obviously, the averaging and mixing effect would be rather small; and the mill would be likely to find itself running through different types of cotton in a succession of spurts rather than in a smooth, homogeneous blend. The only really effective blending method in use was that of the mixing bin, and this was so costly that it was used only by mills where uniformity of product was absolutely essential.

It should be pointed out that lack of adequate blending in the opener room was not quite as essential then as now. Then, practically all mills ran two or three processes of picking, two processes at least of drawing, and three or four processes of roving. The doublings behind these processes helped materially in blending the cotton. Today, when many mills employ only one process of picking, one process of drawing, and one process of roving, doublings have been reduced to the point where they cannot be depended upon to accomplish much blending; and the problem is thrown back to the opener room.

The solution of the blending problem was worked out independently by several mills at about the same time. All that the machinery builders have

done is to come along afterward and substitute well-built machines for the rather crude, home-made equipment first used by the ingenious millmen.

The first proper blending unit I ever saw was running in a South Carolina mill in 1926. The following summer, I saw a similar unit in a very large mill in New Hampshire. Both mills believed the idea to be original. I do not doubt that much earlier applications of the same idea could be found by thumbing over old records.

The South Carolina mill man had hugely extended the feed apron of his bale breaker and had rounded up ten or twelve old hopper feeders. These he had arranged along the apron in such a way as to deliver to it. Around each feeder, he laid out six bales. Take this idea, smooth up the design, add dust fans to the feeders and pilot lights to show when they are ready for more cotton, take out the bale breaker and substitute the mouthpiece of a conveying pipe leading to the first cleaning machine—and you have the blending unit of today. As a matter of fact, this mill was getting super-blending. It is seldom that floor space is available for as many feeders.

### Opening and Cleaning

The next problem which presents itself in the cotton mill is that of opening and cleaning the cotton. A blending unit, such as described above, does a nice job of preliminary opening and is followed by a line of opening and cleaning machines. A considerable number of types of these machines are on the market and all of them are quite effective. The important thing to note is that the progressive mill of 1937 has studied its raw material, and its desired product, and has put in enough of these machines to deliver the cotton to the picker room in satisfactorily open and clean condition.

The first of the modern opening and cleaning machines to find wide acceptance in this country was the vertical or Creighton opener. A great deal of controversy has raged around this machine and, regardless of its merits, it is definitely not fashionable today. I believe it is fair to say that most authorities now feel that the Creighton is a rather good opener, but a poor cleaner. If it is set accordingly and the beater speed kept down to a reasonable figure, it can be a useful machine. Although few Creightons are now sold in this country, many existing ones have been worked into modern lines of opening machinery. They are generally put in immediately after the blending system, or bale breaker as the case may be, to prepare the cotton for the more efficient cleaning machines later in the line.

The modern mill is prone to place its main dependence, so far as cleaning is concerned, on one or another of the Buckley-type machines which have been popularized in this country during the last twelve years. There are a number of makes, known by various names and numbers. Some beat from feed rolls and some do not. Some beaters are large in diameter and some are small. All of these machines have beaters of the characteristic porcupine type, and all have relatively large grid-bar area as compared with earlier machines. All of them do a grand job of cleaning and the modern opener room is built around them.

Summing things up, the mill of today, as contrasted with the mill of fifteen years ago, has learned to remove as many impurities as possible from the cotton while it is still in loose form. The Buckley beaters knock out leaf and motes without pulverizing them. The cage sections and cleaning trunks remove dust and sand; also some short, unspinnable fly. The net results are a cleaner product, less wear and tear on subsequent machinery, and better working conditions through reduction of card-room lint.

The revolving-flat card is the despair of the machine designer. Little change has been made in it for 30 years or more. It is so simple and effective that it is difficult to see how it can be greatly improved until some entirely new principle is introduced—something which seems unlikely at present.

In Europe, efforts have been made to cheapen the construction of the card, without harming quality or production, by using smaller cylinders and fewer flats. This is the idea behind the English Shirley card and the Continental cards of Rieter and Marzoli. It is said that the smaller-diameter cylinders require somewhat more frequent stripping but that, otherwise, the cards work as well as the standard model on carded work at least.

The most important disadvantage of any cotton card is the necessity for frequent stripping. This involves labor, loss of production, and damage to the evenness of the sliver produced. One attachment makes use of revolving continuous strippers, opera ng on the principle of the fancy roll, which raise the stock and prevent the cylinder wire from loading. Another device, which has found some favor in Europe, consists of a dielectric plate placed close to the surface of the cylinder. The revolving cylinder sets up a static charge on this plate, which causes the cotton fibers to stand out and delays loading of the wire. This device does not eliminate stripping, but its backers claim that stripping need be done only at intervals six to ten times longer than usual.

So far as the card is concerned, the greatest advance scored in the last fifteen years is not a matter of design at all. The mills have come to appreciate the importance of thorough carding and to realize that this means slow and light carding. The cards in a well-run mill on carded work today are operated on much smaller productions than in the past, and the effect on the quality of work produced has been considerable.

***AT A MEETING of the American Society of Mechanical Engineers, in Boston, Jan. 28, Mr. Truslow presented a paper entitled "Developments in Cotton Spinning Machinery." We abstracted some of his remarks for the article "Roving Goes Long Draft," March, page 106. Herewith we offer a further selection of topics from the same interesting paper.***

### Spinning

As regards the spinning frame, the two big steps ahead during the last ten to fifteen years have been the use of wide gages and large packages on coarse work, and the introduction of the long-draft spinning systems.

Large-package spinning has become a commonplace. Almost all mills on yarns coarser than 20s either have installed it or will do so as soon as finances permit. The wide spaces between the spindles permit the use of very high speeds without causing the yarn to whip and break down. The large rings and long traverses make it possible to build a bobbin containing a tremendous length of yarn. This reduces doffing cost and winding cost and greatly reduces the number of knots. Fewer knots, particularly with coarse yarn, mean better weaving and knitting.

The subject of long-draft spinning has been written about so much that surely every textile man is familiar with the various mechanisms used. Since close to 7,000,000 spindles are now running in this country alone, it can scarcely be considered new or untried. Practically all the spinning now building is being equipped with one or other of the leading systems. Hundreds of existing frames are being altered every month.

The advantages of long-draft spinning are well-known. A given count of yarn can be spun with its aid from a coarser and, hence, a cheaper roving than heretofore. Also, since all of the cotton fibers, whether long or short, are controlled properly, smoother drafting takes place and stronger, evener yarn is produced. The earlier objection to the long-draft spinning systems—that they were complicated and dirty—has been overcome by patient, step-by-step refinement of design.

# In the Month's Textile News

## World Textile Conference Held

The World Textile Conference held under the auspices of the International Labor Organization convened in Washington April 2 for sessions expected to last about two weeks. The purpose of the conference is to develop recommendations for consideration at the annual conference of the I. L. O. in Geneva in June.

John G. Winant, former chairman of the Social Security Board was elected permanent chairman.

Governor Winant in his opening address pointed out that this conference was not for the purpose of drawing up a convention, but rather to make a technical study so as to give basis for definite action at the annual meeting of the I.L.O. in Geneva in June. He stated that a draft convention limiting the hours of work in the textile industry is definitely on the agenda for the Geneva conference and that the need for study in advance became apparent at last year's meeting. Out of the realization of this need grew this technical conference in Washington.

The delegates were welcomed by addresses delivered by Secretary of Labor Perkins and Secretary of Commerce Roper. Representatives from several of the countries responded. The Government representative from Japan, in his response, paid a tribute to the accomplishments of the recent Murchison mission to Japan, as the latest in a series of steps which over the years had developed understanding between the two countries.

Details of the developments at the conference will be published in next month's issue of TEXTILE WORLD.

*With a bow to Paul Webb, some member of the Rayon & Synthetic Yarn Peddlers Association of New England depicts the horrible conditions of a sold-up market.*

*Poster which will be used for National Cotton Week.*

## Textile Trend Is Up

EVERY textile index is pointing upward. Total consumption of raw material during the first quarter of 1937 was at least 20% over that for the corresponding period of last year and probably 30% over the first quarter of a "normal" year (1924-31 average). Moreover, each of the individual branches of the industry shared in this advance.

The same story holds true in the raw material price situation. Cotton, wool, silk and rayon all advanced and obviously it was difficult to keep prices of fabrics in line with raw materials, particularly since mills in so many of the branches were sold well ahead. However, one outstanding result of the month was the correction of the softness which had developed in staple cotton cloths. TEXTILE WORLD's manufacturing margins on print cloths showed a steady recovery last month, even in the face of a rising cotton market.

Two factors have been primarily responsible for the latest strengthening of the textile position. One of these has been the general fear throughout the country that we might be on the verge of a run-away situation. The other was anticipation of labor troubles with resulting stoppage of production. The fear of a general textile strike, at least in anything like the near future, was practically removed before the month closed but most branches of the textile industry continued to show buoyant tendencies.

Everything points to continued strength at least during the balance of the first half of this year. It would take someone more foolhardy than this writer to predict the course of the last half of 1937. The best bet seems to be that there will be a corrective period some time during those months, the intensity and duration depending upon the course of general business and the developments in the labor situation.

Beyond all that, the best bet is that, despite interruption, we can look forward to active and profitable business in textiles for probably two years at least.

## Japan Cottons Committee Named

MEMBERS of the American section of the joint Japanese-American Cotton-Textile Industries Committee have been appointed as follows: Dr. C. T. Murchison, president of Cotton-Textile Institute, chairman; Fessenden S. Blanchard, Pacific Mills, New York; G. Edward Buxton, York Mills, New York; L. W. Chamberlin, manager of Osaka Branch of National City Bank of New York at Osaka, Japan; and Paul Steinorf, United States Trade Commissioner at Tokyo, temporary member. This group, working with the Japanese section of the same committee, will have charge of the operation and administration of the agreement on limitation of cotton cloth shipments to the United States, which was effected recently by the mission from the American industry which went to Japan under the leadership of Dr. Murchison.

## Rayon Conference

PLANS are now practically completed for the National Rayon Technical Conference, to be held in Washington, D. C., Friday and Saturday, May 14 and 15, under the co-sponsorship of the Textile Division and Washington Section of the American Society of Mechanical Engineers, the American Association of Textile Chemists & Colorists, the United States Institute for Textile Research, Committee D-13, and the Throwsters Research Institute. Tentative program follows:

*Friday morning*—Sponsor, A.S.M.E.; Chairman, C. H. Ramsey; "Air Conditioning of Textile Plants Making and Using Synthetic Yarns," L. L. Lewis, Carrier Engineering Corp.; "Mechanics of Weaving Synthetic Yarns," Albert Palmer, Crompton & Knowles Loom Works.

*Friday afternoon*—Sponsors, A.A.T.C.C. and T.R.I.; Chairman, Dr. Louis A. Olney; "Cause of Rayon Crepe Variations with Special Reference to Throwing," John Macia, Research Fellow, A.A.T.C.C. and T.R.I.; "Effect of Embossing and Boil Off on Finished Crepe Fabrics," James McGibbon, North American Rayon Co.

*Saturday morning*—Sponsor, Committee D-13; Chairman, Herbert J. Ball. "Manufacture and Use of Cut Rayon Staple," Dr. F. Bonnet, Viscose Co.; "Testing of Rayon and Acetate Yarns and Fabrics," E. Freedman, R. H. Macy & Co.; "Corrosion-Resisting Metals and Alloys in Rayon Equipment," C. W. Hinkle, Republic Steel Co.

An informal dinner will be held Friday evening at the Wardman Park Hotel, which will be the headquarters of the Conference.

All interested in the manufacture of rayon yarns and fabrics—whether or not they are members of any of the co-sponsoring organizations—are cordially invited to attend the conference and take part in the discussions. Details regarding hotel reservations, transportation, etc., may be obtained by writing to M. A. Golrick, Secy., Textile Division, ASME, 29 West 39th Street, New York.

## Gives Four Weeks Vacation with Pay

STILLWATER WORSTED MILLS, with headquarters at Harrisville, R. I., have pioneered again in the field of employer-employee relations. Austin T. Levy, treasurer, has announced that his company this summer will give four weeks vacation with pay, or four weeks double pay if they remain at work, to employees of more than one year standing; two weeks with pay to those employed more than six months but less than a year; and one week with pay to those of less than six months standing. The company is suggesting that employees who fall in the four weeks vacation group take not more than two weeks vacation and the balance in money. The announcement stated that it was the company's intention to permit "members of the organization to share still further in the firm's present prosperity." Last fall Stillwater gave employees a 20% advance, as against the 10% increase of the majority of the industry.

**FIRST LONG-DRAFT ROVING**

***IN the article "Roving Goes Long Draft," on pages 106 to 109 of our March issue, we stated that "probably the first information made public on the development of a long-draft roving system was contained in a paper . . . . . published in the November, 1932, issue of TEXTILE WORLD." Our attention has since been called to an article entitled "Saco-Lowell Again Pioneers with Long Draft on Roving," printed in the April, 1930, issue of the Saco-Lowell Bulletin. That article discussed the application of the Saco-Lowell-Roth drafting method, widely used today in spinning, to the roving operation. While that method is no longer in use for roving, having been superseded by the present Saco-Lowell controlled-draft system described in the March issue, it undoubtedly helped to blaze the way for the present trend toward long-draft roving, now so intensely holding the attention of the cotton industry.***

# Textile Personalities

*Kenneth B. Cook*

WE imagine the subject of this sketch—Kenneth B. Cook—has practically a monopoly on one hobby, so far as textile men are concerned. It is dancing! Five to six hours a night at this pastime is a "nice workout," he admits, or rather boasts. He believes it an excellent exercise and a pleasant way to keep in condition. We should like to present a picture of Ken tripping the light fantastic. However, the snapshot herewith shows him engaged in what he calls his "greatest hobby"—bringing up a family of three (two boys and one girl). It also serves another purpose in that it will disabuse anyone of the notion that Ken, because of his enthusiasm for dancing, is the lounge-lizard type. As further evidence is the fact that his sports include tennis and golf, and that he is an ardent baseball and football fan. He is referred to as Brown's most loyal and rabid rooter and never misses a game.

Born in Concord, Mass., in 1893, he graduated from Lowell Textile Institute in 1913, collecting the N. A. C. M. annual medal in his stride, and then served successively as designer and assistant superintendent, American Mills Co., Waterbury, Conn.; manager, textile section, U. S. Rubber Co., Newark, N. J.; and technical superintendent, Winnsboro (S.C.) Mills. In 1928 he joined up with his present outfit, Manville Jenckes Corp., Manville, R. I., first as technical superintendent and now as vice-president in charge of manufacturing.

One of his many distinctions is his long contribution to Committee D-13 of the A. S. T. M., first as secretary, later as vice-chairman, and then as member of the executive committee of the society itself.

We forgot to mention a few paragraphs back that Ken is also fond of music—and conducts a family orchestra. All of which adds up to a well-rounded personality.

QUITE often a good technical man leaves a mill job to go with a machinery firm or some allied industry, but it is rather unusual for a machinery man to resign in order to become affiliated with a mill. And it is particularly interesting when that person becomes agent of a plant such as Chicopee Mfg. Corp. of Ga. at Gainesville. That is exactly what happened to J. C. (Jim) Platt who began his textile career as a machinery erector for H & B American Machine Co. after graduating in textiles from Georgia Tech in 1906. Prior to this connection he worked during holiday periods in a number of Augusta, Ga., plants.

After installing machines in many parts of the United States, the slow-spoken Georgian decided to go into textile manufacturing, and resigned his position to become affiliated with Sibley Mfg. Co., Augusta. One might easily imagine that some hereditary urge may have impelled the move since both parents' families were in the textile business. In fact, one grandfather was superintendent of the first mill in North Carolina to reopen after the Civil War.

Jim Platt earned his spurs at Sibley, and later held a number of responsible operating-executive jobs with John P. King Co., Augusta, and Echota Cotton Mills, Calhoun, Ga. The next step was to Aragon (Ga.) Mills, Inc., where he acted as agent for several years before becoming resident head of Chicopee. Mr. Platt's chief hobby is his two boys and two girls, ranging in ages from 14 to 20, at least two of whom will be in college almost every year until 1944.

*J. C. Platt*

# *Assails Regain Standards*

## Committee D-13 considers their abolition as it banquets George B. Haven at Providence Meeting

ON THE same day that Committee D-13 banqueted Professor George B. Haven and voted him an honorary membership in recognition of his long and valued service to the committee and the industry, a service partly identified with the development of regain tests, it proposed to discard the use of regain standards. The proposal was formally announced by R. H. Brown, of Parks-Cramer Co., chairman of D-13's sub-committee on atmospheric conditions, at one of the general sessions of the spring meeting, held at Providence, R. I., March 10 to 12 inclusive.

Mr. Brown recommended that D-13 "adopt the method of conditioning samples in the standard atmosphere as the preferred method for all physical testing, numbering, and correcting of weights."

This recommendation may mark the day an important one in the history of the American Association for Testing Materials; but it was probably no more important than that day in 1917 when Professor Haven—then not even a member of Committee D-13—was persuaded to become its chairman. That occurred on his chance attendance at a committee meeting during a business trip to Washington, according to Professor Haven's reminiscences at the dinner in his honor on the 11th. He outlined some of the accomplishments of D-13 during his participation in its activities and recommended that in the near future special attention be given to the development of the following: adjustable-tension yarn reels, measuring reels which will unwind and rewind 1000-yd. cones accurately, instruments for detecting and measuring corkscrew in ply yarns, mechanically driven automatic laboratory pick counters, slatted conditioning ovens, and "good" portable electric psychrometers. He spoke highly of the recent attempts to develop repeated-load testing machines and of the development and use of revolving conditioning racks; but he expressed disapproval of the determination of twist by any procedure which involves retwisting.

Professor Haven's work was lauded in speeches by Dr. D. E. Douty, of U. S. Testing Co., who was toastmaster at the banquet; by Russell T. Fisher, president of National Association of Cotton Manufacturers, who called Professor Haven "the father of the scientific testing of textiles"; and by E. Dean Walen, of Pacific Mills, who presented Professor Haven with a framed testimonial on behalf of the committee. In his response, Professor Haven said that he could characterize D-13 by one word—"honesty." The committee, he said, seeks to show things as they are and avoids exaggerating, bragging, and making a show. "So long as it sticks to honesty," he concluded, "success will crown its efforts."

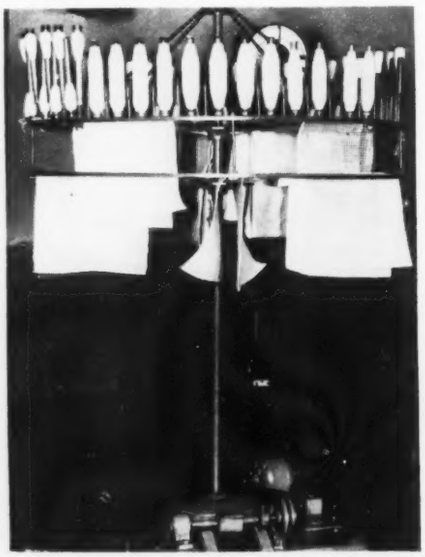
### Regain an Arbitrary Figure

The honesty which Professor Haven commended was evident in the careful consideration given the proposal to discard the use of standard regains—a proposal which, if adopted, casts aside one of the committee's more widely known accomplishments. The object of the proposed change is of course primarily one of simplifying testing and the interpreting of results. It was emphasized that a strong point in favor of the change is the fact that standard regain is at best an arbitrary figure and that normal regain varies with the history of the material tested and also with the impurities it contains.

Regulations suggested for future testing include one which specifies that "tests shall be made after exposure to 'equilibrium' in the standard atmosphere in motion, equilibrium being approached from the dry side," and another to the effect that some suitable tolerance—say, $\pm 2$—shall be established for per cent relative humidity and degrees temperature. It was recommended that a table showing what combinations of humidity and temperature give a regain comparable to standard conditions be published for the benefit of laboratories not equipped for preventing temperature rises. It was also proposed that the increase or decrease in weight, divided by the original weight of the sample and expressed as a percentage, be called the "regain factor" and be used in correcting weights. Mr. Brown expressed the opinion, however, that the old standards cannot be abolished over night but must be allowed to remain as alternates for a time.

### Regain Proposal Discussed

Mr. Brown presented his recommendations in a paper which was the closing



*ROTATING CONDITIONING RACKS. Referring to the rack shown at the left, Mr. Adams said that the main shaft should be vertical, with rotating bearing at top and thrust bearing at bottom. It should have two rings, each approximately 54 in. in diameter, the first 50 in. from the floor and the second 6 in. above that. For single yarn the top ring should contain 100 spindles, 4 in. long and spaced 1½ in. apart. Bobbins should be half full, and speed should be regulated according to movement of the air. Samples of fabrics placed in this rack should be so spaced as to allow the air to circulate thoroughly around each. The samples may be supported on ¼ in. rods, and they should measure 18 to 20 in. in width and length to enable the operator to make retests, if necessary, without delay. The conically shaped rack shown at the right is used for heavily plied yarn and has five rings and 75 spindles spaced to take care of the small twister bobbins and the various large cones and spools. The speed, Mr. Adams said, should be 1½ r.p.m.*

feature of a symposium on atmospheric conditions and regain, of which he was the chairman. He said that the suggestion was originally made to him by G. E. Hopkins, of Bigelow-Sanford Carpet Co., and that other members of the committee have already expressed high approval.

Mr. Brown's paper was discussed by Mr. Hopkins; W. D. Appel, of the National Bureau of Standards; and A. C. Clifford, of Western Electric Co. Mr. Appel supported the proposal so far as physical testing is concerned but questioned its desirability in the case of chemical analysis. He also expressed the opinion that the standard atmospheric conditions of 65% relative humidity and 70° F. should not be made to apply to all tests but that the best conditions for any particular test should be determined and adopted. Mr. Clifford agreed that the proposal should not be made to apply to chemical analysis, but pointed out that the standard atmospheric conditions now in effect have been found suitable for practically all purposes and are widely recognized as standard.

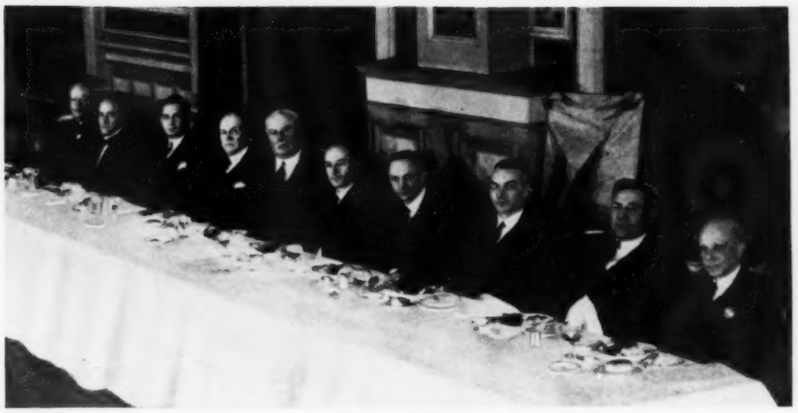
The first speaker at the symposium was R. H. Adams, of Callaway Mills. Mr. Adams stressed the importance of testing under standard atmospheric conditions and pointed out that air movement in the conditioning of textile materials is a very necessary consideration. He advocated the use of rotating conditioning racks and described two such racks employed in his laboratory, as illustrated by the accompanying photographs. The racks, he said, should be built in the center of the testing room, and the height of the heavy fabrics and heavily plied yarns should be so arranged that the materials meet the movement of air as it is discharged from the air ducts against the wall and as it is being returned to the air washer.

Results obtained by testing pile fabric in an unconditioned laboratory are practically worthless, stated A. G. Ashcroft, of Alexander Smith & Sons Carpet Co., the second speaker. He explained that after partial conditioning—that is, humidity control plus use of the Gwaltney type of regain-control instrument—his mill has found it possible to get results which are reproducible and which are satisfactory for the type of research involved. As an example of test variations which can result from lack of air conditioning, he stated that a pile fabric will show a 100% difference in wear when tested at 20% relative humidity as against 65%.

### Gases Affect Hysteresis

Dr. A. G. Scroggie, of Du Pont Rayon, the third speaker, cited a report of the National Bureau of Standards to the effect that hysteresis in the case of moisture desorption and absorption vanishes when no gases are present during the conditioning. Since there is usually air present when equilibrium is approached from the dry side, he recommended that equilibrium be approached from the wet side, a practice contrary to most test methods now in use. Dr. Scroggie's talk was illustrated by numerous charts thrown on a screen, these serving to bring out such points as the following: (1) A 5% change in relative humidity produces a 1% change in moisture regain. (2) A change in temperature has little effect on moisture regain. (3) Rayon denier increases .2 for a 1% increase in moisture content, the filament both swelling and elongating. (4) Moisture reduces wear resistance, but not in direct proportion to the amount of moisture, because the lubricating action of the moisture tends to counteract the weakening of the rayon.

A paper on asbestos regain was presented by David Wolochow, of the National Research Council of Canada.



*HEAD TABLE at testimonial dinner to George Bartholomew Haven, prominent textile scientist and professor emeritus of advanced machine design, Massachusetts Institute of Technology. Left to right: C. B. Finckel, of J. H. Lane & Co., a charter member of D-13; W. H. Cady, of U. S. Finishing Co., president of American Association of Textile Chemists and Colorists; R. T. Fisher, president of National Association of Cotton Manufacturers; D. E. Douty, of U. S. Testing Co., toastmaster; Professor Haven; Prof. H. J. Ball, of Lowell Textile Institute, chairman of D-13; E. D. Walen, of Pacific Mills; Prof. Zenas Bliss, of Brown University; C. H. Clark, secretary of U. S. Institute for Textile Research; and H. J. Jaquith, of Minot Hooper & Co., a charter member.*

### Structure of Cotton

That the wetness or dryness which a textile material has experienced in its history determines its normal regain was the contention of Dr. A. C. Walker, of the Bell Telephone Laboratories. In an interesting paper on the structure and moisture-absorbing properties of cotton fiber, he discussed the results of tests conducted with the aid of a thermal-conductivity cell capable of registering changes in relative humidity to a fineness of .05%. With these results as a basis, it has been possible for him to construct a theory concerning the fiber structure.

Dr. Walker explained, by means of chemical formulas, how three water molecules may be attached to one cellulose molecule; and he described a theoretical arrangement of molecules which would account for the amount of fiber swelling which takes place when moisture is applied to cotton. It has been found, he said, that a 50% increase in relative humidity will increase the diameter of a cotton fiber 5%.

### Business Meeting

At the general business meeting, which was presided over by Professor Herbert J. Ball, of Lowell Textile Institute, who is chairman of Committee D-13, Secretary William H. Whitcomb announced that all matters voted to letter-ballot at the October meeting had received approval. Progress reports were then presented by the chairmen of the various sub-committee sections, and the following recommendations were voted to letter-ballot:

In the woolen and worsted yarn standards, the term "free fat" and "soap fat" shall be changed respectively to "ether extract" and "alcohol extract." The tentative test method for wool felt shall be advanced to standard. The standard TS 2202 on Wool and Part-Wool Fabrics, promulgated by the Division of Trade Standards, National Bureau of Standards, shall be approved by D-13 (conditional upon preliminary approval by the wool sub-committee). The rayon strength test, single strand, shall call for a distance between jaws of 18 in. in the case of the pendulum-type machine, and the rate of load for the constant-loading machine shall be 4 grams per denier per minute. In the case of rayon, tensile may be specified "at break" or at "yield point" and shall be expressed in grams per denier of the yarn before testing. The wool-top standard shall be expanded to cover the entire range from 80s to 36s (subject to preliminary approval of the wool sub-committee). Tentative standards on fastness and on copper and manganese in textiles shall be advanced to standard.

# *Preventing Wrinkles*

## Finisher can take various steps to avoid these defects in woolens and worsteds

By David Welsh

WRINKLES in woolens and worsteds have been the downfall of many a finisher. Any finisher can make wrinkles in the fabrics he is processing; but many have difficulty in preventing them and find it impossible to get rid of them once they have formed. In the March issue, the writer listed the principal causes of wrinkles and gave some hints on preventing them. That, however, was only the first chapter in the story of "Wrinkle-Preventing Wrinkles." The second installment follows.

A great help in the prevention of wrinkles is a simple automatic overflow which keeps a given amount of water in the washer during the entire duration of the rinse. This has a three-fold purpose. First, it keeps the cloth floating in perpetual motion in plenty of water, forcing a change of position every time the goods pass up and through the squeeze rolls—instead of dragging around in the same position and running almost dry as the water races out of the bottom gates. Second, when the water has reached up to the overflow, it can be choked down at the valve; this is a decided advantage where water is scarce or costly, and especially so where a steady run of hot or warm water is used. Third, it actually prevents tie-ups caused by the washer filling up to and over the suds box, sometimes winding around the bottom roll (what a mess), or backing up over the delivery roll and tying the goods in a tangle that takes valuable time and back-breaking effort to undo.

The automatic overflow consists of a 3-in. hole bored in each side of the washer near the center upright casting and 2 ft. 6 in. or 3 ft. from the bottom, according to the depth of the washer. Where very light dress goods are run, a row of six 1-in. holes is better, to prevent the goods from being sucked through the hole by the rush of the water. With this overflow working the bottom gates can be kept closed, and—most of the time—the suds box gate. The wide-awake finisher will soon visualize the advantages to be had by the overflow holes, the great help it is in avoiding washer wrinkles and washer tangles. Another aid in the prevention of wrinkles is giving the goods added time in the soap run in the washer. It is often thought that the only function of the soap is to cleanse the goods, and the quicker that is accomplished the better; therefore the time is cut, much to the detriment of the handle. After all, the soap used to scour is an effective and cheap softener, and an extra 15 min. in the soap, on any type of worsteds, pays well in the improvement of the quality of the cloth. Goods of tighter weave or lower grade will be much benefited by an extra 30 min. in the soap, and this will often eliminate wrinkles, which, on a shorter run, would annoy the finisher. This extra soaping while the goods are in the washer costs no more, except for added time.

### Wet Rolling Machine

Even if there are wrinkles in the goods after they leave the washer, there are devices available which will eradicate them before they reach the dryer. For example, there are several good wet-rolling machines made by various finishing machinery builders, which are quite effective. With these machines, the goods are run through a small tank of hot water and over a stretch roll which pulls the goods sideways while pliable and then winds them on a wooden roll. The goods are usually wound two pieces on a roll and set up on end to stand overnight. Just before the day's work is done, the rolls are reversed, so the draining will not be all from one end. The same machines can be used as rolling machines without using water in the tank, simply taking the goods after they are extracted and just damp. This is particularly effective on softer fabrics where the wrinkles are not so deep. In wet rolling, a cotton leader is sewed on each end of the two pieces and the water heated to around 125° F. When set on end for the night, the rolls should not be allowed to touch one another, as stains will result. If piece dyes are rolled up on the wet-rolling machine at too high a temperature, a watered or moiré effect may develop.

The continuous crabbing machine also is helpful in avoiding wrinkles. With this machine, the goods can be given two runs before or after scouring and two more runs after dyeing—three tanks at a boil and one cold water.

A large mill making mens' wear union piece dyes, cotton warp, worsted filling, had an epidemic of cross wrinkles—very unusual. This trouble was corrected by speeding up the reels of the dye kettles from 27 to 35 r.p.m., the theory being that the cotton warp resting so long in the bottom of the kettle at each revolution, and at the boiling point, became so creased that the cross wrinkles resulted. The fact that the faster speed of the reels cured this fault proved the theory to be correct.

Another mill on piece dye worsteds, in the habit of throwing out 25% of the production on account of wrinkles, overcame the difficulty by reducing the number of pieces in a set from 12 to 10 both in the washer and dye kettle—a clear case of overcrowding.

A mill making serges had a succession of wrinkles over a considerable period of time. It was finally found that the washer rolls were set up too high and were not giving enough squeeze; when the rolls were let down $\frac{1}{8}$ in., the wrinkles disappeared.

***SCHEDULE NO. 1 for Plain Bearings; Old Looms, 80-hr. Week.***

1. Oil picker rods five times a week; use brush.
2. Oil pick balls on first of week; use brush.
3. Oil pick balls and cams on Thursdays.
4. Oil crankshaft and cam bearings twice a week.
5. Oil balance of loom once a week.
6. Oil and clean thoroughly when replacing warp.
7. Oilers should see that all oil holes are kept cleaned out.

•

***SCHEDULE NO. 2 for New, High-Speed Looms; 80-hr. Week.***

1. Lubricate camshaft, crankshaft and rockershaft bearings once every two weeks; use pressure gun.
2. Lubricate all other bearings once every week; use pressure gun.
3. Lubricate cams and gears once a week; use brush.
4. Lubricate all bearings that require oil once a week; use moderate-pressure oilcan.
5. Clean and lubricate all parts when warp is out.

***SCHEDULE NO. 3 for All Looms; 80-hr. Week.***

1. Crankshaft, camshaft, and rockershaft:
   (a) Plain bearings, hand oiled—twice weekly.
   (b) Pressure fittings—weekly.
   (c) Anti-friction bearings, pressure fittings—monthly.
2. Pick balls:
   (a) Hand oiled—twice weekly.
   (b) Pressure fittings—weekly.
3. Pick cams: Brush applied—weekly.
4. Harness cams:
   Brush applied—every two weeks.
5. Gears:
   Brush applied—monthly.
6. Miscellaneous plain bearings, loose pulleys, and clutches:
   (a) Hand oiled—weekly.
   (b) Pressure fittings—weekly.
7. Jacquard heads:
   Spray—as needed.
8. Electric motors:
   Waste-packed—monthly.
9. Shafting:
   Ring oiled—monthly.
   Hand oiled—twice weekly.
10. General:
    Clean oil holes and completely oil looms when warp is out.

## Taking the guesswork out of

# *Loom Lubrication*

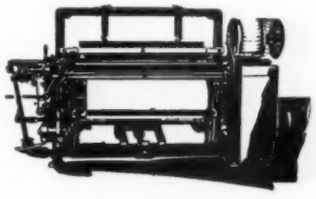
By Ivar Moberg

THERE are some parts of the loom that require exceptional care in lubricating. First, we have the picker rods on box and pick-and-pick looms. These rods should be oiled with good oil every time the looms are started up after being stopped for an hour or longer. The reason for this frequency of oiling is that the friction between the picker and the rod generates considerable heat at times, and the "thirsty" picker absorbs the oil. As long as the loom is running and the picker rod is kept heated by the constant friction, there will probably be enough lubricant sweating out of the rawhide picker to permit it the necessary freedom on the rod. However, when the picker and the rod are permitted to cool, the lubricating property of the picker itself is materially reduced, so that the picker will run resistantly on the picker rod. In a pick-and-pick loom, with its double-action picking, it is especially important that the picker return instantly after each pick, so that the shuttle can enter the box. If the return movement of the picker after the pick is a bit sluggish, it will block the free entrance of the box for the incoming shuttle, and a serious smash is likely to result. In oiling the picker rod, the application is best made by pouring the oil on a piece of cloth, or a small mop, and rubbing it the entire length of the picker rod. If an oilcan is used, there is always danger of excessive oil that will be thrown on the material being woven when the loom is started.

***In the March issue Mr. Moberg discussed oiling systems and types of lubricants. The present article treats of some particular applications and presents lubricating schedules.***

### Driving Gears

The driving gears on looms present a distinct problem, for here we have not only the usual loads on the teeth resulting from the transmission of power, but also there occurs a very definite additional shock load at every pick. Unless proper lubricants are used, the shock which comes with the pick will rupture the lubricating film, which otherwise would be sufficient. It is well known that most of the wear on



loom-driving gears takes place on the teeth corresponding to the pick. It is not always as well realized that faulty gear lubrication may show up in imperfect weaving.

Lubricants have been developed for this service which are exceptionally viscous and tacky in character. While not so stiff as to pack down, forming solid masses between the teeth, they nevertheless provide films which are tough enough to withstand the impact of the pick shock. Their ability to tack around the gears provides complete surface protection. The tacky character of such products makes them excellent also for the lubrication of cams, where rubbing pressure is appreciable.

The foregoing will also apply to the motor pinion and its mate. However, since these gears have a very high speed, the adhesiveness of the lubricants becomes of utmost importance. A lubricant should be used which will shroud the cut teeth in these gears with a protecting film which will not be thrown off by centrifugal force. It must not pack at the bottom of the teeth and thereby create a tendency to force the gears apart. Probably the best way to apply lubricant to these gears is to equip the gear guard with pressure fittings and use a grease gun.

### Oiling the Jacquard

The jacquard machine presents another problem. Here we have a network of needles and hooks of an extremely delicate character. If we have gone to the extreme of high-viscosity oil for other loom parts, we must go to the other extreme of low-viscosity oil for the jacquard. Application can be made either with oilcan, brush, or grease gun. In this case we may turn also to application of the lubricant by spraying. A low-viscosity oil, say 100 seconds Saybolt at 100° F. and of the highest lubricating quality, used in an atomizer and sprayed on the needles and hooks may be the best method. The atomizer can be of the common fly-sprayer type. It is obvious that the jacquard must be well cleaned with compressed air before the application of the lubricant. The oil most suitable for this purpose is one which does not gum nor form lumps, has resistance to running, and has cleaning properties. The same oil and method of application are also well suited for lettering dobbies.

It is exceedingly difficult to lay down any hard-and-fast rule for the lubrication of looms, as many factors enter into consideration. The frequency of lubrication depends upon: (1) type of looms; (2) speed of looms; (3) type of bearings, whether plain or anti-friction; (4) type of lubrication, oilcan, grease-cup or high-pressure; (5) type of lubricant, whether straight mineral oil, semi-fluid, or grease; (6) kind of fabric woven, whether clean, "dandruffing," or lint-shedding; and (7) hours of weekly run.

The tables give three loom-lubrication schedules recently worked out by some of the largest oil companies in the country. It should be kept in mind that the reduced frequency of applications of lubricants indicated in the tables will be advisable only if we take advantage of the latest developments in this line and use lubricants of the proper viscosity and of the highest lubricating quality. The engineers of reliable firms always stand ready to assist us with advice as to the proper lubricant in each specific case.

# *Staple Gains in England*

**From our Manchester (England) Correspondent**

FUNDAMENTAL changes in textile economics are foreshadowed by the growth in staple-fiber consumption in England and Europe. When the public buys a garment which is apparently wool or apparently cotton, it may contain varying percentages of the new rayon fiber either to give new effects or to lower manufacturing costs—or, in the case of Germany and Italy, to keep down the level of imports of raw materials.

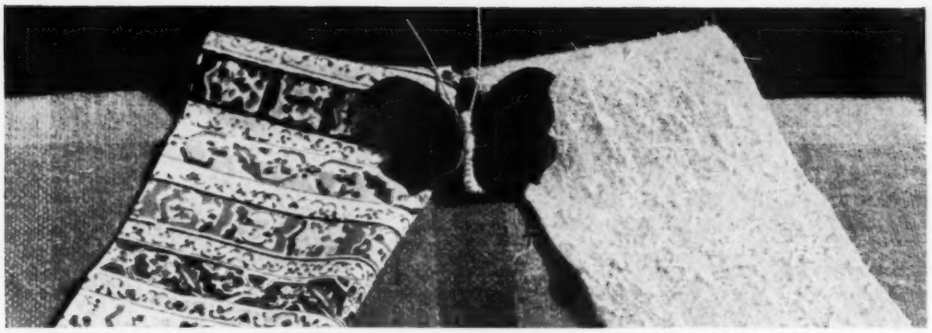
The Nazi Government has decreed that all woolens shall contain 20% of staple fiber and all cottons 15% of staple. The production of staple fiber as a domestic textile raw material is being encouraged in every possible way in the two leading Fascist countries, and accordingly development is not allowed to go forward normally. Instead, the fiber is being forced ahead irrespective of its adaptability to the use in question.

A very different condition exists in England. There rayon staple fiber has been a "dog with a bad name." It got off to a bad start in 1927; its dubious value as regards strength and wearing qualities, combined with the then relatively high price, made it an unsatisfactory article in the made-up state. Courtaulds, however, through constant research have succeeded in improving the tensile strength some 30 to 40%. Since Lancashire firms were not in a position to buy new spinning machinery,

1½-in. staple has been developed to meet the requirements of the fine spinning trade there. It is now free of excise duty, and accordingly enjoys an unnatural price advantage in comparison with continuous-filament rayon.

Research toward finding new markets for staple has been constant. Continuous research is being carried out with different-denier filaments to give different effects. Where a soft yarn is required the 1-denier filament instead of the 1.5-denier filament is likely to be developed, and there is already a 1.25-denier filament available to the trade. In trades where a strong, wiry handle is required, a yarn made of 3-denier-filament fibers may well prove effective. Efforts are also being made to develop a rather longer staple in Lancashire, which will mean added strength. The rise in crossbred wool prices in the recent autumn brought with it a most interesting new development. Yarns made of 1½-in., 1.5-denier-filament staple fiber blended on a 50-50 basis with Australian cut wool tops, and spun on cotton machines, appeared in the ribbed-underwear trade. There was nothing of the silky appearance about these goods. The expert would have to be called in to distinguish them from 100% wool. The staple fiber is actually stronger than wool, and good wearing and washing tests resulted from these soft, warm and wool-like goods. Yet the difference in price between the 100% wool and the 50-50 mixture in the case of a dozen pairs of long pants as supplied to the wholesaler was 29 to 40 shillings, with the rayon-mixture goods at the lower figure.

As yet, the worsted trade in England has not taken whole-heartedly to the product, but Courtaulds are busy equipping a worsted spinning mill to be run on demonstration lines in a similar capacity to the Arrow mill, Rochdale, which has done much to develop the staple-fiber trade in Lancashire.



*Fabrics show British influence in the plaid flannel and in the decorated tweed; the coronation gaiety in the print. The butterfly comes from Mr. Symonds of London and is made of the same velvet as used in the coronation robes.*

# *Coronation*

## Influence on fabrics reflected at Paris openings

By Florence Burchard

*Fashion Consultant, Paris, France*

IN the Paris openings, dressmakers and tailors went British to a house, from the largest to the smallest. Fine, soft tweeds, slubbed and nubbed tweeds, cheviots, Shetlands, striped flannels and jerseys, plaided mannish suitings, worsteds, classical serges, fine diagonals, and plain and printed cashmeres predominated in all collections.

With the exception of the sober mannish suitings, Coronation gaiety prevailed in color and design. There were the Scottish clan plaids, Coronation stripes, 'Prince of Wales' plaids, crepe de Chines and cashmeres printed with crowns and heraldic devices, lamés with 'God Save the King' worked out in metal threads, and plain silks and wools in stained-glass and heraldic colorings. Black, so beloved by the Parisiennes, was brightened by an 'opposition' (as the French term it) of a vivid self or contrasting fabric, a gay print, a touch of shiny leather, or a flamboyant arrangement of flowers.

Surfaces on the contrary are mat (dull) and there is a decided indication of a return to smoother surfaces for autumn. This tendency is demonstrated in the flat reliefs favored in practically all houses: in the ready acceptance of the pin-striped flannels; the tightly woven and sheer, etamine-surfaced jerseys; the hard-surfaced mannish suitings; the Shantungs (natural and synthetic); the wools and silks with a slightly knotty surface, and in the universal featuring throughout all collections of jersey (usually of synthetic yarns) for afternoon and evening dresses and ensembles. Schiaparelli features a sheer wool and rayon chiffon with a slightly crinkled surface for evening. And there are the crins (synthetic horsehair weaves like stiff nets) which are featured in at least one outstanding evening model in all important houses.

The flat relief is generally brought about by a fine twill, a small square in an irregular yarn on a smooth surface, or a fine knotty yarn.

Among the silk and synthetic jerseys for formal afternoon wear, and for dinner and evening ensembles, there are the fine twills—dull or slightly shiny; the jersey nets (synthetic)—three weights of a plain jersey, light, medium, and quite heavy, having the appearance of wool, and a jersey marocain.

Owing to the intermixture of rayon and other synthetic yarns which prevails in all types of fabrics, silks, wools, and linens alike—it is often difficult to classify some of them even by touch. Some of the light-weight wools, combining angora, rayon, and acetate with the natural wool, are extremely soft to the touch; others by a special process or twist of the yarns have a suppleness combined with a rather wiry feel, and a crush-resistant character. In many of the sports fabrics, wool, silk and rayon are combined in a way to give them the appearance of jersey.

Grosgrains and ottomans, while not featured, will bear watching for autumn and winter as there is already an indication of a 19th Century influence in the August collections. The very wide evening skirts featured in practically all important houses as companions to the straight, slender evening skirt—some of them slightly hooped, the caped evening hoods, and accessories of Victorian inspiration suggest the 19th Century quite definitely as one of the trends for the coming autumn.

The soft English tweeds, checks, plaids, etc. and the novelties along these lines, half wool and half silk or half wool and half rayon, will undoubtedly be strong for autumn and winter sports.

The Supra-Velna prints—rayon twills—are the novelty of the season and will probably be good in the United States next summer. The old fashioned alpacas (wool and synthetic), featured by Schiaparelli, promise well for next summer as do also the Shantungs, natural and synthetic. Flannels should be good for autumn. Schiaparelli is styling for Viyella and is featuring Viyella flannels in her spring and summer collection.

Dull-surfaced satins of superior quality will be good for fall and winter dinner ensembles and evening wear.

While high relief cloqués are not generally featured, Alex shows one in lamé for evening coats which is outstandingly lovely.

Flat relief cloqués in cotton prints and piqués were strong in the summer collections.

Printed wool and wool and rayon cashmeres will be important for sports blouses this autumn.

## Use of synthetic resins to produce

# *Wool-Like Finish*

## on spun-rayon fabrics

By Philip LeBrun

***WOOL-LIKE** finishes on spun-rayon fabrics are an offspring of the numerous experiments in obtaining crease-resistant fabrics. While many different chemicals have been tried, the various condensation products of urea and formaldehyde give the best results to date. This type of resin is used successfully on all types of regenerated cellulose fibers. In the accompanying article the author describes some of the methods thus employed. Various patents have been granted on the application of synthetic resins, and it is advisable that the finisher familiarize himself with the patent situation before he starts commercial production of any of the finishes utilizing these materials.*

IN THE preliminary treatment of spun-rayon fabrics which are to be given a wool-like finish by means of synthetic resins, all sizing material and other extraneous matter must be removed before dyeing and finishing; otherwise it will be impossible to get good penetration of the fiber, and an unsatisfactory finish will result. The first operation is an impregnation in caustic soda solution having a density of ½ to 1° Bé. This is followed by a soaping at 200 to 250° F. for 45 min. Next the goods are given a thorough hot and cold rinse. These operations are carried out most economically on a continuous scouring machine.

Most light-weight fabrics are dyed in rope form. Heavy fabrics must be padded or jig dyed, due to the tendency of such fabrics to develop dye breaks which show up as dark streaks in the finished goods. A few of the lighter-weight constructions have a tendency to curl at the edges when running in rope form. Such fabrics must also be dyed in the full width; otherwise light-colored streaks result. As a class, vat dyes are the most suitable; however, more economical, yet satisfactory, results can be obtained by the use of selected direct colors. In any case, every dye intended for use on fabrics which are to be given a wool-like finish should be tested in the desired depth of shade by treating with the resin and then curing at the proper temperature.

The synthetic resin can be prepared by dissolving 35 lb. of urea in 50 gal. of water containing 1 qt. of commercial ammonia and adding, with constant stirring, 25 lb. of paraformaldehyde. Commercial 40% formaldehyde can be used in proper proportions as a substitute for paraformaldehyde. However, as formaldehyde is less reactive and requires considerably more heat for curing, paraformaldehyde is usually preferred. When the solution is clear, and not before, about 1 gal. of 75% sulphonated oil is added to make the cloth more supple. An excessive amount of oil will make the cloth too raggy. Just before using the solution, enough acetic acid is added to make it acid to litmus paper. The resin solution is stable indefinitely in the alkaline state if stored away from heat. After the acetic acid has been added, the solution will set to a spongy mass in a few hours and finally harden to a solid mass in about 24 hr.

There are several types of urea-formaldehyde resins which can be purchased in the open market in a water-soluble form, ready for application. A catalyst which is to be added to the impregnating liquor is usually sold with the resin. In finishing plants which do not have the services of a chemist who is experienced in the manufacture of synthetic resins, use of one of these prepared water-soluble compounds will usually be more satisfactory and more economical.

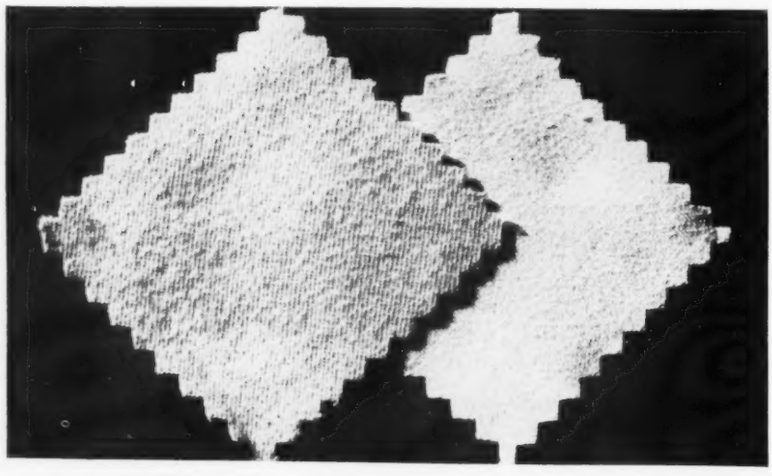
The cloth should be as dry as is possible before it is impregnated with the resin solution. Use of wet goods or partially dried goods will result in a finished cloth with a varying degree of wool-like handle, due to the gradual dilution of the solution. The fabric is best sized on a two- or three-roll mangle having a very tight nip. The tighter the nip, the more thoroughly the resin will be squeezed into the fiber. After impregnating, the fabric should contain about its own weight of liquor, so that after drying it will have gained between 10 and 20% in dry weight of the resin.

The sized fabric is dried on either a nest of cans or on a Palmer unit. The former is usually preferred, due to the greater ease with which it is possible to remove any accumulated resin from the machine. Tension during the drying after impregnating must be kept at a minimum because overstretching will cause a wiry feel, which is difficult to remove without again wetting the cloth. This would necessitate a second run through a mangle containing a dilute oil solution, followed by drying on a net or loop dryer.

A heat treatment of 2 to 15 min. is needed after drying to set the resin thoroughly so that it will be insoluble in water and in most of the ordinary solvents used for dry-cleaning. The length of time necessary and the temperature required for curing depend on the type of resin used. With the formula given above, a treatment for 15 min. at 220° F. is sufficient. Manufacturers of the water-soluble, prepared resins recommend various temperatures and times for curing their several products—one resin, for example, requires 2 min. at 340° F.

It is impractical to dye a resin-treated fabric, as it has an increased affinity for many dyes. Unless the mangle is set with a greater degree of accuracy than is practical in most mills, the resulting cloth will be shaded from side to side. In addition, as the resin has a slight water repellency, it is extremely difficult to get satisfactory dye penetration after the fabric is sized.

The cloth is framed to width after curing. Before they are put up on tubes, heavy fabrics are generally calendered once in order to get the desired draping qualities. Lighter goods do not require calendering.



# *Notoriously Variable*

## Are woolen yarns, but a carder can eliminate the extreme irregularities

By L. A. Crosland

WOOLEN yarns are notoriously variable in counts. The variation is usually caused in the carding process, and it can generally be classified under one of the following three heads:

1. Variation of the same ropings over a period of time.
2. Variation from side to side of the machine.
3. Differences between the ropings from the different spools produced at the same time.

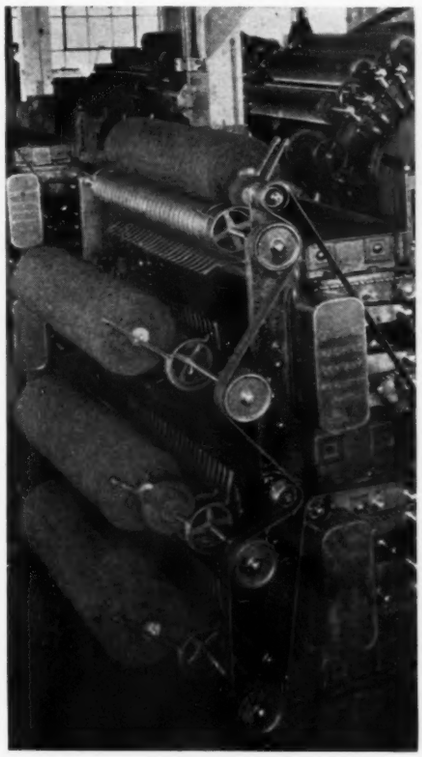
### In Same Ropings

Variation of the first type may be difficult to trace; but the first point at which a check should be made is the hopper feed, for inefficiency in weighing cannot be wholly eradicated afterwards. Points to watch are that the toothed lattice runs as slowly as is consistent with the pan receiving its full load in sufficient time for it to empty correctly and that the comb which spreads the material on the teeth of the lattice is set as close to them as possible. The purpose here is to insure that the quantity of material falling into the pan with each stroke of the brush is as small as possible, so that errors caused by a brushful falling into the pan when only a few fibers are needed for a correct weigh are as small as possible.

All scale-pan bearings should be kept in good condition; and, if plain, they should be of the hardened-steel knife-edge type, though roller bearings can be used if preferred. Careful adjustment of the amount of material in the pan is advisable, the ideal amount being the amount that the pan will reasonably hold, as this reduces the percentage variation in counts caused through slight variations in the actual weighs.

When variation caused by the hopper has been reduced to the absolute minimum, attention should be paid to the various feed aprons, as these are likely to become impregnated with grease; and the resulting slip is difficult to detect, owing to the slow speed at which the aprons run. All belt drives should be under suspicion and kept clean and at the correct tension. Where possible, cross drives should be used for the main drives. Synchronized electric drives will cut out all variation due to slip.

A further cause of this variation from time to time is the taking up of



material by the cards after each stripping, this causing the counts to be fine for a period. To prevent this, the fancies and doffers must be so set and speeded that the main cylinders are cleared efficiently. The fancies must be strong enough to be masters of the cylinders. Also, after each stripping, the machine must be allowed to run down, producing waste, until the counts are found by test to be correct.

### From Side to Side

Variation from side to side of the machine is caused on the finisher card. It may be due to incorrect laying of the slivers at the intermediate feed, or to coated feed rollers which do not hold the material firmly. In both these cases the remedy is obvious.

Further causes of this type of variation are the disturbance of the material by the fancy and rolling of the material by the strippers in the direction in which the fillet runs. When the fancy is at fault, the ropings in the middle of the machine will be heavy and those at the sides will be light. If the strippers are the offenders, the counts will be light at the left side of the machine and progressively heavier to the right side. The cures for these faults, in the case of the fancy, are, first, to keep the fly strippers sharp and set as close as possible to the fancy without actually touching; second, to set the fancy lightly into the cylinder; and, finally, to run at a high speed, though this must be modified according to the type of material being carded. Strippers should be ground at intervals, so that they can hold material without rolling.

### Variation Between Bobbins

Variation between the bobbins from the different heights of rub aprons may be found on both the double doffer and the tape condenser.

On the double doffer it may be due to the top doffer taking more than its share of the material from the cylinder despite the difference in the widths of the rings on the two doffers. To prevent this, both doffers should be kept in exactly the same condition and set alike, close to the cylinder with the top one running slightly faster than the bottom one, to correct the variation between the two. The taking-off strippers should be set exactly the same distance into their respective doffers, so that the "mouth" of each is kept open to the same extent and each doffer is capable of taking the same amount of material off the cylinder.

With the tape condenser, variation occurs through the variation of the tension of the tapes feeding the different heights of rub aprons. It is much more likely to occur on the series type of machine, in which each end is fed by a separate tape, than in the endless type in which one long tape feeds each end in turn. In the latter machine the tension is equal throughout. With the series type, the various tapes must be adjusted until no variation is evident. Also it will be found to be an advantage to drive the tapes from the rollers immediately above and below the dividing rollers instead of from the taking-in rollers, as this insures the tapes being tight at the point of division of the web—not slack, as with the older method of driving.

If one roping is found to be small continuously, it denotes that the tape feeding that end is stretched and slack and is being robbed by the tighter tapes adjacent to it. In this case, the tape must be cut, tightened, and respliced.

# *Taking Stock . . .*

## The present and future position in textiles

By Frank Nasmith

*Managing Director for the United Kingdom, Universal Winding Co.*

DEPRESSION in the textile industries has been ascribed to many different causes, some relevant, some grossly ridiculous. Unfortunately in a number of cases even men closely akin to the industry have been led away by foolish statements that have been given undue and unwarranted prominence. It must be agreed that there have accumulated over a period of years a set of conditions which, originally instituted as panaceas for our sufferings, have only helped to add to the burden under which we are suffering today.

Probably growth of competition can best be assessed from a comparison of spindles and looms throughout the world, although it must be very clearly appreciated that it is not actual numbers of productive units that are responsible for the whole of the competition. Still, it will do as a jumping-off point.

The figures following are illuminating:—

| Cotton Spindles | 1913 | 1936 |
|---|---|---|
| Great Britain..... | 55,652,000 | 41,391,000 |
| U. S. A. ..... | 34,260,000 | 28,157,000 |
| Japan ..... | 2,300,000 | 10,867,000 |
| Germany ..... | 11,186,000 | 10,109,000 |
| Italy ..... | 4,600,000 | 5,483,000 |
| France ..... | 7,400,000 | 9,932,000 |
| India ..... | 6,084,000 | 9,705,000 |
| In Great Britain there were:— | | |
| Mule Spindles..... | 39,320,885 | 30,387,000 |
| Ring Spindles..... | 8,908,660 | 11,004,000 |

### Long Draft Spinning

The point has been made that the ring frame is the predominant spinning unit in any country other than Great Britain. Further it should be emphasized that the increased productivity of spinning plant due to the employment of high drafting is being taken full advantage of by our competitors while we lag behind. Throughout the United States I am given to understand that high drafting has been very largely adopted. Of machines sold on the Continent of Europe, or in any other spinning country throughout the world, 97% were fitted for high drafting, while 3% were not so fitted. In this country, referring to new machinery, 18% were fitted with high drafting and 82% were not so fitted. Surely the merits of high drafting—and the ring frame—as a means for securing high production and a yarn which is suitable for a vast range of fabrics common throughout the world today have been amply proved.

***ALTHOUGH Mr. Nasmith, in his address delivered before the Ashton-under-Lyne and District Mill Managers' Association, discussed the textile situation in Lancashire primarily, he presented thoughts which have an international application, and which apply to this country specifically. Herewith is an abstract of his talk.***

It is fully appreciated that, owing to depression and consequent lack of funds, we cannot and do not think the same way as some of our competitors. Even during the depression in the United States, examples of plant modernization were frequently noted. The following example is typical and it has been quoted not because it matches up to our average range of counts, but because it took place in one of the mills of the Southern States of America where labor has to be trained and the industry comparatively new. The modernization program was carried out at the Dwight Mfg. Co., Alabama City; the result was:—

| | 1930 Old | 1934 Modern | Change % | |
|---|---|---|---|---|
| Spinning Spindles | 76,084 | 59,868 | 21.3 | less |
| Roving Spindles.. | 17,232 | 4,412 | 74.4 | less |
| Drawing Deliveries | 644 | 384 | 40.4 | less |
| Cards ..... | 367 | 480 | 30.8 | more |
| Pickers ..... | 39 | 15 | 61.5 | less |
| Production per Week (lb.)..... | 387,000 | 410,000 | 5.95 | more |
| Hours per Week (see note)..... | 1.6x56 | 2x40 | 14.0 | less |
| Operatives Employed ..... | 1,725 | 1,364 | 20.9 | less |
| Average Yarn No. Spun ..... | 9.79s | 11.10s | 13.4 | finer |
| Lbs. per Spindle per 10 hr. (4 months averages) | .618 | .808 | 30.8 | more |

(Note.—Spinning only 1.6x56. All other departments 2x56.)

### The Work-Week

Away back somewhere around 1919-1920 many foolish decisions were taken from which the results have been dire both politically and socially.

Reference in particular is to the reduction of hours and the setting up of the 48-hr. week which was agreed to at the Washington Conference in 1919. We have rigidly maintained our bargain, and if we had not no doubt the trades unions would have had much to say. But we maintained such agreement alone. We were trusting indeed. There was no alteration in the hours worked by mills in the Southern States of America until the NRA scheme of President Roosevelt came into being. Those mills worked 60 hours and even longer, yet the contract referred to above was signed at Washington. Today there is certainly a 40-hr. week for the individual, but the mills can work two shifts of 40 hours per week if they wish. That makes it 80 hours to our 48. In fact we work two days a week and pay overhead on seven. And America is now asking us to agree to a universal 40-hr. week throughout the textile industries.

### Conclusions

In our conclusion we can divide conditions into three groups: first, those we can ameliorate ourselves; second, those outside our immediate control—the effect of which with combined effort we should be able to minimize if not entirely eradicate; and lastly those conditions over which we have no control whatsoever.

In the first group I include the modernization of machinery and mill methods. This paper is growing far too long and it would be extended enormously, if I gave you chapter and verse for the broad proposal I make, that you can adopt means which will improve production and cheapen cost. Even with such improvements you may not be able to compete with a set of conditions in Japan over which we have no control, but you will be lining up with other competitors who have working conditions more akin to ours.

In the second group I place such matters as hours of labor, quotas, trade restrictions, and tariffs.

In regard to the question of hours of working, I feel sure from what I know we shall not be so foolish as again to agree so readily to adopt shorter working hours unless it is very, very certain that all who subscribe to the agreement maintain it completely and without the slightest deviation. That is one question in which you have a voice.

In the third and final group come those conditions over which we have no control. The price of basic commodities is the most important. We want a stability in currency which we do not have. A real industrial conference at Geneva, and/or the throwing out of the window of all these unnecessary arguments that are leading so furiously to re-armament, might bring about, not in one year perhaps, or even five, a thorough and complete understanding that would bring back industrial prosperity, peace and happiness to the countless peoples of the earth.

## A Lancashire drive to stop

# *Weak Selling*

From Our Manchester (Eng.) Correspondent

***MOST OF THE DETAILS of the accompanying story will have a familiar ring to American textile men—but the happy ending will not. We have from time to time the same problems of price cutting, unprofitable orders, and collapse of "gentlemen's agreements." In Lancashire they are doing something about it via legal means. There are still a few obstacles in the way of such an accomplishment here—but the story makes interesting reading, anyway.—Editor.***

IN recent years the contracting export business in cotton goods has had two unfavorable influences upon the Lancashire industry. One has been the contraction in the number of spindles and looms necessary to carry on the available business, and the other has been an insidious form of internal competition.

In an endeavor to keep their mills running, in the uphill fight for the smaller amount of available business, costing on sound lines has been scattered to the winds by many Lancashire sellers. Buyers have taken advantage of the manufacturers' unfavorable position to play one firm against another, and gradually margins have disappeared. There have been many orders placed in Lancashire in recent years, definitely below cost price, accepted to keep mills running in the hope of an improvement, and many more border line cases, which have not been actually at a loss, but which have made inadequate allowance for depreciation.

In the fine spinning trade there were at one time several "gentlemen's agreements," which meant that firms bound themselves to maintain a certain level of prices for each count. These agreements have always been successful during periods of reasonable activity, but as soon as the trade quieted down again, certain mills would start the interminable price-cutting movement once more.

### The First Move

In 1935 an act was passed in the British Parliament which enabled any section of the Lancashire trade to get together and agree to a definite policy on prices, and put forward a pact which could be made legally binding provided 80% of the firms in the trade agreed to such action.

Since then attempts have been made to get the whole trade working on a sound basis.

Frank Platt of the Lancashire Cotton Corp. is generally credited with setting the ball rolling and bringing about the first legally binding price margin agreement. This system was applied first of all in 1935 to the coarse American yarn trade centered around Royton and was known as the Royton Agreement. The minimum basis gives a price which fluctuates with the raw material position, but which is costed so that due allowance is made for spindle depreciation.

### To Be Made Enforceable

Towards the end of 1936 the fine spinning section of the trade had decided on a gentlemen's agreement pending a legally enforceable agreement. This meant advances in fine yarns from 3d to 8d per lb. Later the necessary 80% was secured, and now it is only a matter of time before a legally binding agreement is put into force.

It is the fine section of the trade which has least excuse for not having sold on a profitable basis in the last few years, as the trade has not contracted to anything like the extent that the coarse and medium sections of the trade have done. The turnover in 1936 in weight of business in fine yarns was very substantial, but few firms will be able to show a profit on the year.

There is now a plan in course of completion for doubled yarns. Besides the coarse American trade, the medium mule trade has already a price margin scheme in operation, and there are schemes in course of formation for the medium ring trade. It now seems but a matter of time before the whole trade will be working on these price margin schemes, and in anticipation of these there have already been marked advances in yarn prices in every section of the trade, and the spinning trade as a whole is working on a profitable basis for the first time for some years.

There is no suggestion of prices being forced up to boom levels, and in the main the trade is aiming at a basis of 5% on its capital after allowing for depreciation.

### Application to Fabrics

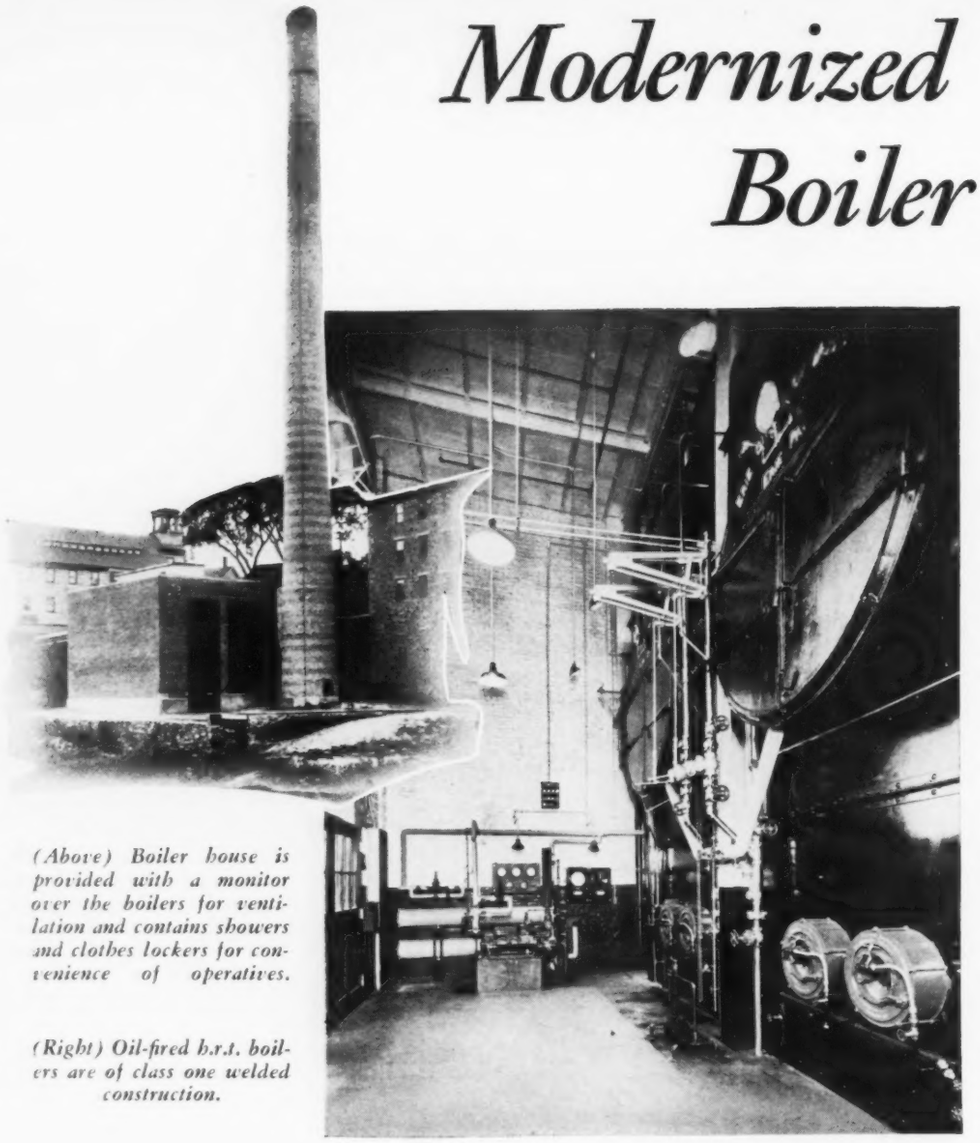
The question of putting the cloth trade on a sounder basis is more complicated, but a contribution to this has been made by the Cotton Spinners and Manufacturers Association, which in April last brought out a treatise on scientific cloth costing. Their system, in the period of better yarn prices, has been comparatively widely adopted by many weaving concerns, and it applies to both gray and colored woven goods.

It is perhaps remarkable that during the period of better prices there has been a greater weight of business booked than for some years past, and there are now a considerable number of weaving mills, which are asking July and August for delivery. The Spindles Board, which is buying redundant spindles under the Spinning Industry Act is notable to get offers for spindles for sale, and is held up for the present, as redundant spindles have disappeared at least temporarily.

There is a greater weight of export business, and with the rising Japanese prices Lancashire is hoping for a greater share of world business than she has recently enjoyed. There have also been strong protests to the British Government to secure greater favors for Lancashire in reciprocal trading. Higher commodity prices throughout the world are Lancashire's chief hope.

# *Modernized Boiler Plant*

**at Putnam Woolen Corp. displaces two old units.**



*(Above) Boiler house is provided with a monitor over the boilers for ventilation and contains showers and clothes lockers for convenience of operatives.*

*(Right) Oil-fired h.r.t. boilers are of class one welded construction.*

By
Joseph C. Bogue
*Steam Engineer, Boston*
*as told to*
Francis A. Westbrook

PUTNAM WOOLEN CORP., Putnam, Conn., has recently completed erection of a new boiler plant to replace two old units, which were obsolete and incapable of generating the steam required by the mill. In doing this, the boiler-plant efficiency has been greatly increased, thus effecting a material fuel saving. This saving, with other economies in labor accomplished by means of modern equipment, is expected to pay for the new plant in about five or six years. The steam is used entirely for process work, such as drying, wet finishing, slashing, and heating. The company has its own water power and hydro-electric generators, which, at times, supply more power than the mill requires. The surplus power is sold to the utility. However, in seasons of extremely low water it is necessary to purchase some power, and the sales and purchases about balance each other.

In view of the fact that only process steam is used, there is no need to generate the steam at high pressure. An operating pressure of 125 lb. per sq. in. was selected as proper, because 60 to 70% of the steam is used in the wet-finishing division, where it is reduced to 40 lb. pressure by means of a reducing valve. The remainder is utilized at boiler pressure.

### Old Plants Obsolete

The new boiler plant replaces two old ones located some distance apart. No. 1 plant had two 6x19½-ft. h.r.t. boilers rated at 150 hp. each. No. 2 plant had two 4x15-ft. h.r.t. boilers rated at 61 hp. each. Coal was used as fuel, hand firing was employed in both plants, the draft was poor, the settings were very low; and it seemed impossible to effect any practical betterments in the old plants. The operating pressure was 125 lb. This had a good deal to do with the decision to use the same pressure for the new installation, since it meant that a maximum amount of the existing steam piping and equipment could be used without charge.

The new boiler plant consists of two 7 ft. 6 in.x19 ft. 10 in. h.r.t. boilers rated at 301 hp. each. These boilers are class one welded construction of the latest design. Obviously, the conditions here indicated the installation of h.r.t. boilers, mainly because of the low pressures required and the inherent fluctuations in demand for process steam in a woolen mill.

Since all joints are butt-welded, there are no double-thickness joints to cause trouble from overheating. There are no covering plates or lap seams under which corrosion or caustic embrittlement can get a start. In welded boilers, the seams are even stronger than the plate, and should never leak under any possible operating conditions.

By the use of class one welded construction, all calking and riveting on manholes and nozzles are done away with. This eliminates any chance for leaks or need for repairs. Even the blow-off flange and other reinforcements for threaded connections are welded into place. This, of course, means low maintenance and safe and continuous opera-

tion, which are important in a process industry, where failure of the steam supply might easily result in the loss of valuable materials.

The two boilers are set in battery, with a distance from floor to shell of 8 ft., 9 in. The center battery wall is air cooled, the refractories being sectionally supported. The first 12-ft. section of each furnace is lined with super-refractory brick, and the other is first-quality fire brick. The front walls are 18 in. thick, and the side and rear walls 21½ in. thick, of which 13½ in. is fire brick. The stack is of radial brick, 66 in. in diameter and 150 ft. high.

### Oil Used as Fuel

Oil is used as fuel in the new plant. Each boiler is fired by means of two mechanical oil burners equipped with pumps, heaters, strainers, and control equipment. The oil burners are particularly well adapted to taking care of the wide fluctuations in the demand for process steam, in addition to being economical of labor. Control of the combustion operation is manual, but sufficient instruments have been provided so that the condition and operation of the boilers are known at all times. Thus, there is a steam-flow meter for each boiler, a $CO_2$ meter which can be used for either one, a pressure-recording gage, and an indicating thermometer on the feed-water line.

Water for the boilers is taken from a canal and fed by a steam pump or injectors through a closed heater to the boilers. Condensate returns are obtained from the heating system and the dryers. The boilers are equipped with feed-water regulators.

The new boiler house is a 36x44 ft. brick building, 29 ft. high, and is provided with a monitor over the boilers for ventilation. It is equipped with toilet, shower bath, wash bowl, and clothes locker. The oil-storage tank is buried outside.

As might be expected with a new boiler house in a new location, it was necessary to install completely new piping in the building, as well as new piping between the boiler house and the mill buildings. In addition to this, new high-pressure distributing mains were installed in the mill buildings, as the old mains were in poor condition and hardly suitable or consistent with the new steam-generating plant. The main distributing piping between the buildings is supported on overhead trusses. This was considered more desirable than placing them underground, as the outside distances are comparatively short and overhead construction makes for more direct piping, with the avoidance of loops and drip pockets. The fact that the boiler house is at the bottom of a hill had considerable bearing on this consideration. However, it was also the most economical method of construction and generally more simple. Incidentally, this is also an all-welded steel-piping job, both outdoors and indoors. The outside piping is insulated with 3 in. of magnesia inside a weather-proof roofing-paper jacket inclosed in a galvanized wrought-iron covering. Indoors, the insulation consists of 1½ in. of magnesia in sewed canvas jacket.

The new boiler plant was designed and erected under the supervision of Joseph C. Bogue, steam engineer, Boston. Principal equipment was furnished and installed by the following companies: building and foundations, E. J. Cross Co., Worester, Mass.; boilers, Erie City Iron Works, Erie, Pa.; boiler settings, Frank E. Ross Co., Boston; combustion equipment, E. L. Woolley Co., Providence; pumps, Warren Steam Pump Co., Warren, Mass.; soot blowers, Boiler Eqiupment Trust, No. Amherst, Mass.; meters and instruments, Republic Flow Meters Co., Chicago; feed-water heater, Elliot Co., Jeannette, Pa.; valves, Jenkins Bros., New York; piping and insulation, Tucker & Rice, Inc., Worcester, Mass.; steel platforms and ladders, Stafford Iron Works, Worcester Mass.; stack, Alphonse Custodis Chimney Construction Co., New York; feed-water regulators and copes, Northern Equipment Co., Erie, Pa.

# *Style-Show Bell Ringer*

## One of popular fabrics selected by college girls

THE accompanying novelty suiting is one of the more popular fabrics woven at the Textile School of North Carolina State College and selected by the 140 young women of the various North Carolina colleges who are to make costumes and wear them at the tenth annual style show to be held at Raleigh on April 22. As usual, the public is invited to both the style show and a student demonstration of textile manufacture on the same day.

The fabric, Fig. 1, is made on the double-cloth principle, and the drawing-in draft and chain plan for it are given at Figs. 2 and 3. It is made of 20s-2 yarns and contains approximately 64 ends and picks per inch. Two repeats of the color pattern and several repeats of the weave are required to form a complete pattern, and this adds to the textural effect. The warping and picking plan is laid out as follows:

| | | | |
|---|---|---|---|
| 8 white | for 84 threads | 8 white | for 28 threads |
| 2 green | | 2 green | |
| 2 white | | 2 white | |
| 2 red | | 2 yellow | |

*Fig. 3*

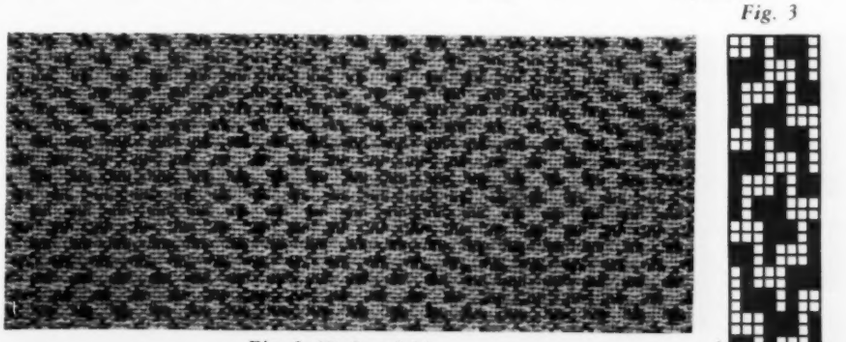


*Fig. 1 (Reduced ½)*

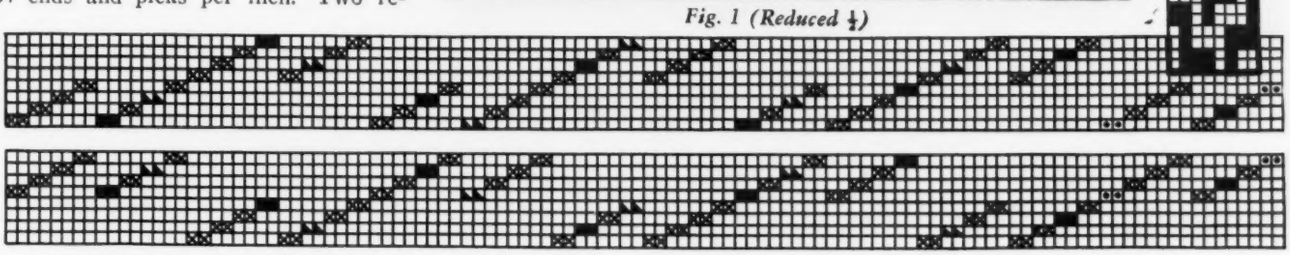


*Fig. 2 (Note this has been cut in half and 2nd half run below the 1st half)*

## Step-by-step calculations in balancing the machinery of a mill on

# *Print Cloth*

**By Gilbert R. Merrill**
*Lowell Textile Institute*

***This article, the twelfth on cotton-mill organizations by Professor Merrill, concludes the discussion on a print-cloth mill which was started in the March issue.***

THE calculations for the amount of machinery necessary to balance a 50,000-spindle mill producing print cloth have been made operation by operation. Each process has been completed before going on to the next. This arrangement shows no more data than the tabulated form which was also in the March issue, but it does show exactly how the various calculations are made and how one figure is obtained from the preceding figures. The calculations are based on high-speed spooling and warping.

Warp Spindles, 28,050—Filling Spindles, 21,950.

*Spinning, Warp:* 30s, 0.22 lb. per 10 hours —3½ in. gage @ 9,525 r.p.m.
28,050 × 0.22 = 6,171 lb.
28,050 ÷ 240 = 117 frames.
37 ft. 6 in. long by 3 ft. 3 in. wide.

*Spinning, Filling:* 36s, 0.21 lb. per 10 hours —3 in. gage @ 8,175 r.p.m.
21,950 × 0.21 = 4,610 lb.
21,950 ÷ 272 = 81 frames.
36 ft. 6 in. long by 3 ft. 3 in. wide.

*Fine, Warp:* 5.60 hank, 1.36 lb. per 10 hours —7x3½, 1,150 r.p.m.
6,171 ÷ 0.98 = 6,297 lb.
6,297 ÷ 1.36 = 4,630 spindles.
4,630 spindles ÷ 152 = 31 frames.
36 ft. 6 in. long by 3 ft. 4 in. wide.

*Fine, Filling:* 6.70 hank, 1.06 lb. per 10 hours—7x3½, 1,150 r.p.m.
4,610 ÷ 0.98 = 4,704 lb.
4,704 ÷ 1.06 = 4,440 spindles.
4,440 spindles ÷ 152 = 29 frames.
3 ft. 6 in. long by 3 ft. 4 in. wide.

*Intermediate, Warp:* 1.80 hank, 5.70 lb. per 10 hours—9x4½, 950 r.p.m.
6,297 ÷ 0.99 = 6,361 lb.
6,361 ÷ 5.70 = 1,116 spindles.
1,116 spindles ÷ 108 = 11 frames.
34 ft. 9 in. long by 3 ft. 6½ in. wide.

*Intermediate, Filling:* 2.00 hank, 4.94 lb. per 10 hours—9x4½, 950 r.p.m.
4,704 ÷ 0.99 = 4,752 lb.
4,752 ÷ 4.94 = 968 spindles.
968 spindles ÷ 108 = 9 frames.
34 ft. 9 in. long by 3 ft. 6½ in. wide.

*Slubber, Warp and Filling:* 0.70 hank, 15.78 lb. per 10 hours—12x6, 650 r.p.m.
6,361 + 4,752 = 11,113.
11,113 ÷ 0.99 = 11,225 lb.
11,225 ÷ 15.78 = 712 spindles.
712 spindles ÷ 72 = 10 frames.
33 ft. 3 in. long by 6 ft. 10 in. wide.

*Drawing:* 50 grains, 124 lb. per 10 hours 1¼-in. metallic, 300 r.p.m.
11,225 ÷ 0.99 = 11,339 lb.
11,339 ÷ 124 = 91.5, or 6 deliveries, 4 heads, 4 frames.
40 ft. 3 in. long by 5 ft. 11 in. wide.

*Drawing:* 50 grains, 124 lb. per 10 hours —1⅛-in. metallic, 300 r.p.m.
11,339 ÷ 0.995 = 11,396 lb.
11,396 ÷ 124 = 91.9, or 6 deliveries, 4 heads, 4 frames.
40 ft. 3 in. long by 5 ft. 11 in. wide.

*Carding:* 50 grains, 109 lb. per 10 hours —10 r.p.m.
11,396 ÷ 0.995 = 11,453 lb.
11,453 ÷ 109 = 106 cards.
10 ft. 6 in. long by 5 ft. 5¼ in. wide.

*Picking:* 12 oz., 3,080 lb. per 10 hours —9.68 r.p.m.
11,453 ÷ 0.94 = 12,184 lb.
12,184 ÷ 3,080 = 4 pickers.
49 ft. 0 in. long by 6 ft. 8 in. wide.

*Wastes* in opening and picking: 5 + 1 + 2 + 0.5 + 1.5 = 10%.
12,184 ÷ 0.90 = 13,538 lb. in the bale.
Actual loss = 1,354 lb.
This loss is divided as lost in the various operations.

*Horizontal:* Up to 15,000 lb. per 10 hours.
12,184 + 203 = 12,387 lb., 1 horizontal.
10 ft. 6 in. long by 7 ft. 6 in. wide.

*Vertical:* Up to 15,000 lb. per 10 hours.
12,387 + 68 = 12,455 lb., 1 vertical.
10 ft. 11 in. long by 5 ft. 7 in. wide.

*Buckley:* Up to 15,000 lb. per 10 hours.
12,455 + 271 = 12,726 lb., 1 Buckley.
9 ft. 10¾ in. long by 6 ft. 5¾ in. wide.

*Bale Breaker:* Up to 15,000 lb.
12,726 + 135 = 12,861 lb. 1 bale breaker.
35 ft. 8 in. long by 6 ft. 9⅜ in. wide.

*Raw Stock.*
12,861 + 677 = 13,538 lb., in the bale.

Starting at spinning and working through to weaving, using high-speed winding and warping, the warp preparation and weaving equipment would be as follows:

*Winding:* 13.39 lb. per 10 hours—750 yd. per minute.
6,171 × 0.99 = 6,109 lb.
6,109 ÷ 13.39 = 456 spindles.
456 spindles ÷ 100 = 5 frames.
44 ft. 4 in. long by 4 ft. 3 in. wide.

*Warping:* 412 ends, 2,550 lb. per 10 hours —400 yd. per minute.
6,109 × 0.995 = 6,077 lb.
6,077 ÷ 2,550 = 2.38, or 3 warpers.
41 ft. 9 in. long by 10 ft. 5 in. wide.

*Slashing:* 2,472 ends, 1,736 lb. per 10 hours.
6,077 × 0.99 = 6,016 lb.
6,016 ÷ 1,763 = 3.42, or 4 slashers.
43 ft. 8 in. long by 8 ft. 0 in. wide.

*Weaving:* 48 yd., per 10 hours—192 picks per minute.
6,016 × 0.995 = 5,986 lb.
5,986 ÷ 0.1044 (weight warp per yard) =57,337 yd. cloth.
57,337 ÷ 48 = 1,195 looms.
7 ft. 10⅜ in. long by 4 ft. 4 in. wide.

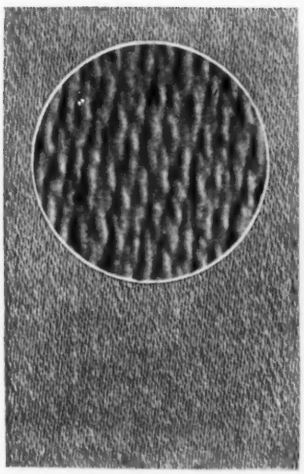
MACHINERY FOR 30s Warp & 36s Filling SIZE OF MILL 50,000 Spindles Print Cloth

| OPERATION | SIZE | WASTE | TOTAL LB. | LB. PER UNIT | UNITS | SPEED | MACHINES | DETAILS | LENGTH | WIDTH |
|---|---|---|---|---|---|---|---|---|---|---|
| Raw Stock | - | | 13,538 | | | | | | | |
| Bale Breaker | - | 5.0 | 12,861 | 15,000 | 1 | - | 1 | 24ft.apron | 35'-8" | 6'-9⅜" |
| Buckley | - | 1.0 | 12,726 | 15,000 | 1 | - | 1 | — | 9'-10¾" | 6'-5¾" |
| Vertical | - | 2.0 | 12,455 | 15,000 | 1 | - | 1 | — | 10'-11" | 5'-7" |
| Horizontal | - | 0.5 | 12,387 | 15,000 | 1 | - | 1 | — | 10'-6" | 7'-6" |
| Picker | 12 oz. | 1.5 | 12,184 | 3,080 | 3.96 | 968 | 4 | 3 Beaters | 49'-0" | 6'-8" |
| Card | 50gr. | 6.0 | 11,453 | 109 | 105.1 | 10.0 | 106 | — | 10'-6" | 5'-5¼" |
| 1 Drawing | 50 | 0.5 | 11,396 | 124 | 91.9 | 300 | 4-4-6 | 1⅛" Met. | 40'-3" | 5'-11" |
| 2 Drawing | 50 | 0.5 | 11,339 | 124 | 91.5 | 300 | 4-4-6 | 1⅛" Met. | 40'-3" | 5'-11" |
| Slubber | 0.70HK | 1.0 | 11,225 | 15.78 | 712 | 650 | 10-72 | 12 × 6 | 33'-3" | 6'-10" |
| Inter Warp | 1.80 | 1.0 | 6,361 | 5.70 | 1,116 | 950 | 11-108 | 9 × 4½ | 34'-9" | 3'-6½" |
| Inter Filling | 2.00 | 1.0 | 4,752 | 4.94 | 968 | 950 | 9-108 | 9 × 4½ | 34'-9" | 3'-6½" |
| Fine Warp | 5.60 | 1.0 | 6,297 | 1.36 | 4,630 | 1,150 | 31-152 | 7 × 3½ | 36'-6" | 3'-4" |
| Fine Filling | 6.70 | 1.0 | 4,704 | 1.06 | 4,440 | 1,150 | 29-152 | 7 × 3½ | 36'-6" | 3'-4" |
| Spinning Warp | 30 | 2.0 | 6,171 | 0.22 | 28,050 | 9,525 | 117-240 | 3½"gg.1¾"Rg. | 37'-6" | 3'-3" |
| Spinning Filling | 36 | 2.0 | 4,610 | 0.21 | 21,950 | 8,175 | 81-272 | 3"gg.1⅝"Rg. | 36'-6" | 3'-3" |
| Winding Warp | 30 | 1.0 | 6,109 | 13.39 | 456 | 750yd. | 5-100 | No. 40 | 44'-4" | 4'-3" |
| Warping Warp | 30 | 0.5 | 6,077 | 2,550 | 2.38 | 400yd. | 3 | 420 ends | 41'-9" | 10'-5" |
| Slashing Warp | 30 | 1.0 | 6,016 | 1,763 | 3.42 | - | 4 | 2472 " | 43'-8" | 8'-0" |
| Weaving Warp / Filling | 30-36 | 0.5 / 1.0 | 5,986 / 4,567 | 48 yd. | 1,195 | 192 picks | 1195 | 2472 " | 7'-10⅜" | 4'-4" |
| | | | 10,550 total (no size) | | | | | | | |

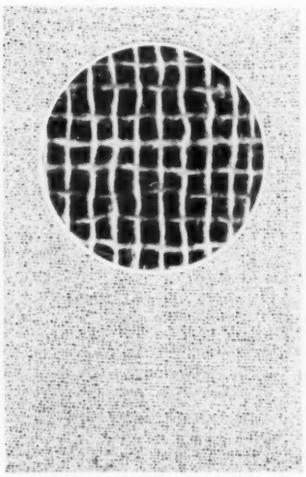
# *Staple Cotton Fabrics*

By John Hoye

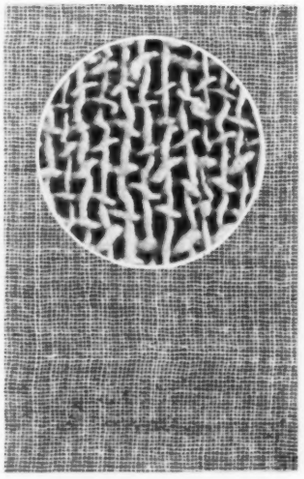
*Fabric Technician,*
*Iselin-Jefferson Co., New York*



***Venetian (Eight-Harness Sateen, Warp Face), 38", 156x64, 2.85 yd.***



**Gray**



**Finished**

***Balanced Box Crepes, two S- and two Z-twist crepe yarns alternating in both warp and filling. 46", 44x48, 9.20 yd., average yarns 50s.***

## VENETIANS

VENETIANS are eight-harness, warp-face sateens which are stronger and heavier than the regular sateens. Single or ply yarns made of fine, long-staple cotton are used in the warp with ordinary filling yarn. Reverse, or *S*, twist is used in the single warp yarns. Where the warp is ply, regular, or *Z*, twist yarns are plied together with a reverse, or *S*, twist. This fabric was formerly imported in considerable quantities for linings in men's overcoats, women's coats, etc. Some of the imported qualities were made with seven harnesses instead of eight because of custom duties. In the weaving of the regular, eight-harness cloths, the warp end interlaces with one pick and then floats over seven picks. Venetians are usually made with an Egyptian-cotton warp and an American-cotton filling. They are very closely woven and usually have three or more times as many ends as picks.

These long floats of fine, long-staple combed yarns produce a very smooth surface which gives an exceptionally silky luster after mercerizing and schreinering. The cloth usually has a slight twill-line effect to the right. Venetians are also made with shadow-stripe effects by using alternate sections of *Z*- and S-twisted warp yarns. These cloths (twills, sateens, and venetians) have been almost entirely replaced by rayon lining fabrics—all rayon or cotton warp and rayon filling.

***MR. HOYE concludes the discussion on sateens by giving details on venetians in this issue. The subject of crepes, which is introduced here, will be continued in subsequent installments of the series.***

*Finishes:* Usually mercerized and schreinered; white and solid colors; imported finishes known as Marquis finishes, i.e., "Marquis de Luxe," etc.

*Uses in finished state:* Linings for men's overcoatings, draperies, cushion coverings, women's coats, pocketbook lining, bathing suits.

*Widths:* Usually 38 in.—also 35, 58 and 32 in.

*Constructions:* 144x64 up to 168x72. 156x64 is the standard construction.

*Warp yarns:* 30s, 36s, and 40s carded.

*Filling yarns:* 23s to 36s carded, 60/2 to 90/2 combed warp.

*Examples of Venetians:*

| | | | |
|---|---|---|---|
| 38" | 156x64 | 2.85 | —Two-ply warp, single filling yarns |
| 32" | 156x64 | 3.35 | —Two-ply warp, single filling yarns |
| 38" | 132x64 | 3.20 | —All single yarns—(reverse twist warp yarn) |
| 38" | 130x66 | 3.35 | —All single yarns—(reverse twist warp yarn) |
| 38" | 168x80 | 3.00 | —All single yarns—(reverse twist warp yarn) |

## CREPES

CREPE, or crinkle, effects on cotton fabrics are formed in several ways. Regular crepes are made with special hard-twisted yarns which have many more turns per inch than ordinary weaving yarns. Fabrics made from crepe yarns immediately shrink or contract when wetted, forming a definite crepe, or crinkle, effect which is permanent and which is not affected by laundering. This contraction, if in both warp and filling, produces a balanced crepe. If crepe yarns are used to produce this contraction in only the warp or the filling, the fabrics are called warp or filling crepes respectively. Uusally a crepe, or granite, weave is used; but it may be a plain weave. Many of the cotton cloths have been replaced by cotton-and-rayon or all-rayon crepes.

For the best crepe effect *S*- and *Z*-twist yarns are used. In a balanced crepe (both warp and filling) two warp ends of *Z* crepe twist are used alternately with two warp ends of *S* crepe twist. In the filling, two picks of *Z* crepe twist are woven alternately with two picks of *S* crepe twist. In finishing there is an equal contraction in both warp and filling, producing a balanced crepe. In addition to 2x2, crepes are also made with 4x4 and other combinations of *S*- and *Z*-twist yarns to form large or pronounced effects.

# . . . Free . . . For the Asking

***READERS interested in the catalogs and other useful literature reviewed on this page, may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York.***

**Maintenance.** Snap-on Tools, Inc. Folder describes line of tools for textile mill operators, with illustrations, dimensions, prices. Line comprises small hand-tool equipment, especially selected for the textile industry, including three pliers designed for loomfixers.

**Lubrication.** Shell Petroleum Corp. "Panorama of Lubrication," an educational lubrication library, covers the history and fundamentals of lubrication from the non-technical point of view. Three 24-page volumes of the series have been issued so far, comprising (1) Fundamentals of Lubrication; (2) Lubricating Friction-Type Bearings; (3) Golden Shell, the Modern Motor Oil.

**Motor Generators.** Reliance Electric & Engineering Co. Illustrated folder describes line of motor regenerator sets, including pedestal-type, single-unit, three-unit and four-bearing sets.

**Motor Control.** Electric Controller & Mfg. Co. Functions, services, and advantages of varied line of steel-clad motor controls described with many illustrations in 16-page booklet.

**Control Instruments.** American Schaeffer & Budenberg Division, Consolidated Ashcroft Hancock Co., Inc. Illustrated 8-page catalog gives specifications, descriptions, and uses of non-indicating controllers, including mechanical specifications, temperature and pressure ranges.

**Floorings.** Truscon Laboratories. Illustrated 12-page colored folder covers new construction and maintenance in floorings, including metallic floor hardeners, non-slip floor hardeners, integral hardening and coloring, surface treatments, and floor enamel.

**Marketing Chart.** Roosevelt Organization. Booklet containing six groups of searching questions bearing on six basic factors of marketing, the answers to which are aids to avoiding pitfalls in launching sales campaigns, new products or new enterprises.

**Instruments.** C. J. Tagliabue Mfg. Co. Staple-bound 32-page catalog No. 900C describes latest models of non-indicating controllers for temperature, pressure, and time; also contains comprehensive discussion of various types of controllers, their applications, and how they work.

**Shipping.** Railway Express Agency. Folder discusses "how to distribute advertising matter with speed and economy," with particular regard to books, matrices, plates.

**Air Conditioning.** Carrier Corp. Illustrated booklet describes use of company's new portable summer air-conditioner in offices and

homes, with fifteen specific advantages of this equipment listed.

**Metal Corrosion.** International Nickel Co. Reprint from *Metals and Alloys* of article on "Some Consequences of Graphite Corrosion of Cast Iron,' by W. A. Wesley, H. R. Copson, and F. L. LaQue of the above-named company.

**Lubrication.** Alemite Division, Stewart-Warner Corp. New revised edition "Alemite Industrial Lubrication Manual" lists company's products, and comprises a comprehensive reference manual, giving data on when and where specific lubricants should be used.

**Chemicals.** Warwick Chemical Co. Illustrated 15-page booklet discusses "Impregnole," in a wide diversity of textile fields, including its application to and removal from fabrics. Chief divisions cover wool, cotton, rayon, silk, knit goods, also a chapter on "the scientific explanation of the theory of water repellency."

**Pressure Recorders.** Bristol Co. Bulletin No. 483 describes new line of low range pressure and draft recorders and controllers.

**Pumps.** Fairbanks, Morse & Co. Folder describes duplex, self-oiling pumps for handling mud and slush, clear water, petroleum products, and other liquids.

**Dryers.** Proctor & Schwartz, Inc. Four illustrated bulletins describe characteristics and usages of the following lines: (1) super dryer; (2) automatic yarn dryer with traveling skein protector; (3) multipass air-lay dryer; and (4) protector duplex garnett unit with 3-cylinder breaker and 2-cylinder finisher.

**Packing.** U. S. Rubber Products, Inc. 112-page manual gives complete engineering data indicating the characteristics of various packings. Special sections cover recommendation charts and charts listing specific gravities, etc.

**Gears.** General Electric Co. Two folders. First describes rotating cam switches, including flanges for mounting standard switches, choice of five standard handles, four standard types and special sequences obtainable; second tells how better service may be obtained at less cost with automatic switch gear.

**Motors.** Allis-Chalmers Mfg. Leaflet describes and illustrates custom-built "quick clean" motors for cotton mills or similar applications where protection against lint accumulation in the motor is desirable without sacrifice of construction and performance.

**Lubricators.** Bijur Lubricating Corp. Bulletin D describes and illustrates various models of automatic lubricating units and their application to textile and other equipment.

**Acid-Proofing.** Pennsylvania Salt Mfg. Co. Booklet on Penchlor acid-proof cement discusses practice in construction of acid-proof masonry in various installations, proper treatment masonry linings, and technical data.

**Instruments.** Leeds & Northrup Co. Catalog EN-96 covers apparatus for measurements in laboratory and plant. First half is devoted to fundamental principles, equipment required, and electrodes for pH measurements; the second section is devoted to catalog listings.

**Cleaning Equipment.** American Monorail Co. 20-page catalog describes uses and advantages of automatic overhead cleaners for spinning, winding, twisting, and warpings; also overhead handling.

**Miscellaneous.** Recent issues of manufacturers' publications containing items having a textile slant are as follows: February *Termaco Times* tells how Terrell's new bobbin stripper cuts time loss in bobbin-lifting during the cleaning operation; current developments in making wool from casein are discussed in Jan.-Feb. Laucks *Notebook;* textile mills that box their products for the distributor or consumer will be interested in a discussion of boxing and the relation of adhesives thereto, in March *Silicate P's & Q's*; the trend to modernistic showrooms and building fronts is discussed in January-March *Dutch Boy Quarterly*; development by Johns-Manville of a new insulating brick for various high-temperature industrial equipment is announced in January-February *Power Specialist*; many phases of retail merchandising of textiles, with particular reference to women's and children's wear are discussed in spring, 1937, issue of Fruit of the Loom *Merchant's Guide.*

# Knitting Arts Exhibition

## *33rd Annual Show to Break All Records*

LAST year's Knitting Arts Exhibition set a record. This year's—scheduled for April 19 to 23 at the Philadelphia Commercial Museum—will establish another. This fact was settled beyond doubt two months ago when the number of exhibitors and amount of space sold had already exceeded the precedent-making total of the 1936 show. At that time, 21 old exhibitors had signed up for increased space; several absentees of the last two years had returned; and 12 new exhibitors had decided to make their debut.

One of the reasons for this progress, of course, has been the improvement in the condition of the industry itself.

Another reason can be found on pages 158 and 159 of the 1937 Annual Review and Forecast Number of TEXTILE WORLD, in which the story of the remarkable mechanical development in the knitting branch during 1936 was told in pictures. Obviously, an exhibition in such a swiftly moving field has a compelling appeal to manufacturers.

Finally, the management of the Knitting Arts Exhibition and the exhibitors have been increasingly sensitive to the requirements of the knitting industry, and have made the annual show respond to its current and new needs. This has naturally resulted in bringing to the Commercial Museum those executives who have the buying decisions.

This exhibition has been held annually, without interruption, for 33 years. Sponsored jointly by the National Association of Hosiery Manufacturers and the Underwear Institute, it is the major event of the year in the hosiery and underwear field. Its importance is intensified by the fact that both those associations hold their annual meetings during the week of the show.

### Hosiery Convention

The annual convention of the National Association of Hosiery Manufacturers will be held Wednesday, April 21, in the lobby meeting room of the convention hall, commencing at 10 a.m. The program will include an address by William H. Gosch, president of the association; treasurer's report by Ernest Blood; report by Earl Constantine, managing director, on "New Outlooks"; report of the nominating committee by P. W. Eshelman, of Wilkes Hosiery Mills Co., chairman; and election of directors and officers.

The board of directors consists of 15 persons, and each year the terms of five of these expire. Those whose terms expire this year are Austin H. Carr, Durham Hosiery Mills; J. H. Davenport, Davenport Hosiery Mills, Inc.; Henry J. Herbst, General Hosiery Co., Inc.; R. O. Huffman, Morganton Full Fashioned Hosiery Co.; and Marshall V. Moss, NoMend Hosiery, Inc.

Election of officers will follow the election of the new directors. The present officers are: William H. Gosch, Nolde & Horst Co., president; Austin H. Carr, Durham Hosiery Mills, Inc., vice-president; Roy E. Tilles, Gotham Silk Hosiery Co., Inc., vice-president; Ernest Blood, John Blood & Co., Inc., treasurer; Earl Constantine, managing director.

### Underwear Convention

The annual convention of the Underwear Institute will be held Thursday, April 22, commencing at 10 a.m., also in the lobby meeting room of the hall.

The program will include an address by Ralph M. Jones, president, annual report by Roy A. Cheney, managing director; reports by group chairmen; and discussion of such vital subjects as Federal legislation, trade practices, etc. The luncheon for underwear executives which proved so successful last year will be repeated. An outstanding speaker will be obtained to discuss some of the industry's current business problems.

Election of officers will take place at the meeting. Present incumbents include: Ralph M. Jones, Utica Knitting Co., president; Benjamin C. Russell, Russell Mfg. Co., Inc., 1st vice-president; Walter W. Moyer, Ephrata, Pa., 2nd vice-president; Oscar W. Gridley, Utica Knitting Co., treasurer; Roy A. Cheney, managing director.

### This Special Section

In view of the importance of Knitting Week in Philadelphia, including the exhibition and the two conventions, the special section of this issue of TEXTILE WORLD starting on this page is devoted to the knitting branch of the textile industry. In addition to the guide to the exhibits, it includes a series of practical articles for operating executives in knitting mills. Covering current developments in hosiery technique, elastic yarn use, underwear finishing, mill lighting, knit coatings, etc. Detailed contents of the section are listed in the adjoining panel on this page.

## *Knitting Features:*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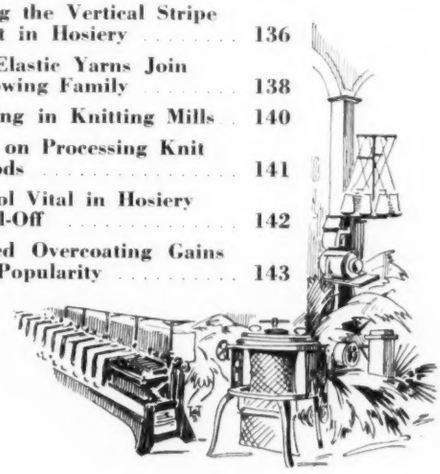


*Textile World's Guide to the*

# Knitting Arts Exhibition

DETAILED descriptions of the booths at the Thirty-Third Annual Knitting Arts Exhibition, Philadelphia, Pa., April 19 to 23, are given on this and following pages. In the report of each individual exhibit which has been announced to date are a list of the products which the exhibitor has chosen to display, booth numbers, and representatives.

**TEXTILE WORLD will maintain headquarters in booths 89-92 at the Knitting Arts Exhibition, Philadelphia, April 19 to 23. Cordial invitation is extended to visitors to make this booth their business headquarters while in Philadelphia.**

**AAA Silk Laboratory, Inc.,** New York. Booth 51. Demonstrating seriplane cleanness and neatness inspection tests, motion picture showing testing operations required to conduct quality-control tests on raw silk. Rep.: C. B. Keller.

**Aberfoyle Mfg. Co.,** Philadelphia. Booths 268, 269, 278, 279, 287, 288. Durene yarn. Rep.: J. P. Holt, E. L. Dale, J. F. McCrudden, J. A. Holt, F. W. Hancock, J. R. Kenworthy, C. D. Gott, E. F. Golden, W. T. Cheatham, R. Yeabsley, C. B. Rapp, J. J. Neil, F. G. Miller, E. J. Neal, H. Buckley, W. C. Brown, W. H. Crenshaw.

**Adamson Bros. Co., Inc.,** New York. Booths 85–88. Lastex yarns and fabrics made therefrom. Rep.: P. Linke, W. Barnhardt, J. Clausen, J. J. Fodor.

**Adelphia Textile Co.,** Philadelphia. Booth 331. Hosiery yarns—resist, immunized, vat-dyed, block-dyed; seaming and looping threads—natural and dyed. Rep.: J. T. Hunter, E. B. Steinmetz, C. Evans.

**Allentown Bobbin Works, Inc.,** Allentown, Pa. Booth 182. Bobbins and spools with heads of fiber, Bakelite, aluminum, and stainless steel; featuring special spools with fiber heads permanently secured to barrels; also bobbins and spools with latest development in fiber colors. Rep.: H. W. Mack, B. F. Mack, H. C. Mack.

**American Aniline & Extract Co., Inc.,** Philadelphia. Booth 176. Textile chemicals. Rep.: A. B. McCarty, T. P. Key, F. A. Carsten, W. P. Gudgeon.

**American Bemberg Corp.,** New York. Booths 244, 245, 244A, 245A. Bemberg yarns and fabrics. Rep.: H. C. Chappell, T. H. Johnson, Dr. W. Schlie, T. Wood, H. Z. Henston.

**American Enka Corp.,** New York. Booths 188, 189. Enka rayon yarns and fabrics. Rep.: J. A. Van Laer, E. W. Martin, R. J. Mebane, R. Faison.

**American Safety Table Co.,** Reading, Pa. Booths 266, 267, 280, 281, 303, 304, 315, 316, 339, 340. Seaming tables, looping tables, ball-bearing clutch drives for all types of sewing machines, and individual drives with electric clutches. Rep.: L. Frankel, M. T. Voigt, H. P. King.

**American Silk Spinning Co.,** Providence, R. I. Booth 247. Spun silk and novelty yarns; featuring blended Silk-N-Wool. Rep.: L. E. Silverman.

**American Silk & Rayon Journal,** New York. Booth 56. Textile publishers.

**American Thread Co.,** New York. Booths 186, 187. Cotton and mercerized threads for all purposes. Rep.: J. W. Kennedy.

**American Vitos Co., Inc.,** New York. Booth 76A. New machine for mending runs and ladders in hosiery. Rep.: A. de Saint Maurice.

**American Wool & Cotton Reporter,** Boston. Booths 69, 70. Textile publisher.

**American Woolen Co.,** New York. Booths 343, 344. Machine and hand knitting yarns. Rep.: N. MacLellan.

**American Yarn & Processing Co.,** Mt. Holly, N. C. Booths 345, 368. Combed and carded knitting yarns. Rep.: T. H. McKinney, E. Hutchison, E. J. Holbrook, E. W. Wood, E. F. Redding, G. Thomas, H. Cosby, T. Moore, J. W. Sauer, J. H. Schoolfield.

**Edward R. Ammon, Inc.,** Reading, Pa. Booth 32. Inspecting and testing equipment for hosiery. Rep.: E. R. Ammon.

**Joseph Amon,** Rahway, N. J. Booth 180. Moistening boxes, conditioning troughs, knitters' benches, topping tables, floor pans, splash pans; also new work boxes. Rep.: J. Amon, R. H. Therrell, L. F. Ott.

**Andrews-Alderfer, Inc.,** Akron, Ohio. Booths 389, 390. Controlastic yarns for knitting and weaving. Rep.: E. D. Andrews, S. W. Alderfer, C. Neeld, H. Legge, E. Legge, C. Vanderback, O. McCurdy, B. I. Brownold.

**Arrow Needle Co.,** Manchester, N. H. Booth 8. Latch needles. Rep.: G. S. Dillon, G. L. Heaton, Jr.

**Atwood Machine Co.,** Stonington, Conn. Booths 217-219. Complete line of silk and rayon throwing machinery in operation. Rep.: A. L. Lewis, T. Dewhurst, J. R. Breen, F. Sails, R. F. Lenihan, L. H. Cornell, F. R. Hoadley, W. R. Gordon.

**Boger & Crawford,** Philadelphia. Booths 238, 239, 256, 257. Mercerized yarns. Rep.: R. C. Boger, E. T. Boger, H. H. Haff, T. F. Haigh, J. J. Nevins, C. R. Beck, W. C. Henderson, W. R. Rietheimer, F. Campbell, Jr., H. B. Chapman, J. D. Whitaker.

**Boshamer & Co.,** Philadelphia. Booths 35, 35AA. Carded and combed knitting yarn and fabrics made therefrom. Rep.: C. C. Boshamer, H. M. Boshamer, D. R. Wilson, H. L. Graeff, C. R. Collins, R. D. McDonald, F. W. Frank, J. R. Kenworthy, R. Reynolds, A. Besser, R. H. Walker.

**H. Brinton Co.,** Philadelphia. Booths 117-122. Knitting machinery: 4-in., 3-feed, trick-wheel rib machine complete with rubber lay-in; 5-in., single-feed, rack-welt rib machine with loose course; 5½-in., 4-feed, automatic rib machine with welt and loose course, selvage welt, rubber lay-in attachment, two-speed and dogless; 18-in., 24-feed scarf machine complete with wheel and tuck bars on all feeds; 18-in., 16-feed scarf machine with wheels and tuck bars on all feeds; 24-in., 16-feed, rib-body machine, Type PR-19, for making fancy welt, blister, and jacquard stitches. Rep.: R. L. Brinton, H. S. Horrocks, J. R. Forrest, W. H. Allerton, S. B. Bittle, R. Baker, E. G. Paules, W. E. Nodwell.

**Bruegger Winding Co.,** Philadelphia. Booths 137, 138. High-speed spindleless skein winder; self-balanced raw-silk swift; combination swift for rayon, silk, worsted, and cotton; Lastex swift; universal rayon-cake swift; over-end running swift for cakes. Rep.: A. Bruegger, W. A. Dobler.

**H. W. Butterworth & Sons Co.,** Philadelphia. Booths 58-60. Textile finishing machinery. Featuring Tube-Tex wet-spreading, extracting, and processing machine in operation. Rep.: H. W. Butterworth, Jr., DeH. Butterworth, W. E. H. Bell, M. Cohn, J. Walters.

**Cannon Mills, Inc.,** Philadelphia. Booths 341, 342. Knitting yarns. Rep.: S. M. D. Clapper, H. E. Aken, C. V. Albright, H. R. Barker, J. C. Bartlett, C. F. Peffer, H. Crumbliss, G. H. Ellis, C. H. Fenn, M. B. Foil, G. B. Lewis, Jr., J. B. Pope.

**Cheney Bros.,** New York. Booth 5. Spun yarns and fabrics. Rep.: W. Smith, K. B. Blake.

**Clifton Yarn Mills, Inc.,** Clifton Heights, Pa. Booths 274, 274AA. Novelty yarns, silk yarns for hosiery, etc. Rep.: I. A. Haigh, W. A. Seidel, C. A. Mitchell, F. J. Krausman.

**Clover Leaf Mfg. Co.,** Honesdale, Pa. Booth 1. Bobbins, pin boards, crates, and reel arms. New large-package principle. Rep.: R. P. Bennett, W. A. Spencer.

**Columbia Narrow Fabric Co.,** Shannock, R. I. Booths 173, 174. Hosiery and underwear elastic; featuring Mys-

ery construction non-shrink webbing. Rep.: G. P. Clark, N. E. Randall, W. L. McDonald, C. W. Seidel, E. J. Straube.

**Charles Cooper Co., Inc.,** Bennington, Vt. Booths 299, 300. Circular-rib, spring-needle knitting machine in operation with pattern wheels for making welt-stitch and fancy fabrics; also complete latch and spring-beard needles. Rep.: W. T. Barratt, J. J. Hayes, R. Rogers.

**Cotton,** Atlanta, Ga. Booths 19, 19AA. Textile publishers.

**Crawford Mfg. Co., Inc.,** New Brunswick, N. J. Booth 354. Automatic and electric stop motions, needles, knitting-machine parts, etc. Rep.: F. Crawford, Jr.

**Cross Cotton Mills Co.,** Marion, N. C. Booth 31. See **J. D. Cunningham.**

**J. D. Cunningham,** Philadelphia. Representing Cross Cotton Mills Co. Booth 31. Double carded and combed knitting yarns in all colors, bleached, and natural, in counts 18s to 40s. Rep.: J. D. Cunningham, E. Cross, Jr., I. I. Davis, H. M. Malyszka.

**Davison Publishing Co.,** New York. Booths 141, 142. Textile publishers.

**Dixie Mercerizing Co.,** Chattanooga, Tenn. Booths 208-211. Natural and mercerized knitting yarns. Rep.: George R. West, Jr., J. B. Frierson, Jr., E. R. Kimball, D. O. Blevins, S. L. Diggle, F. Lemmond, F. W. Frank, J. B. Cameron, A. Cameron, George A. Dalglish, R. H. Perkins, K. M. Johns, A. G. Symonds, E. M. Townsend, Jr.

**Dubied Machinery Co.,** New York. Booths 369, 370, 377, 378. New double-lock links-and-links automatic power machine; also new high-speed double-lock automatic flat power machine for manufacturing knitted outerwear. Rep.: E. O. Spindler, J. Dubied, M. Wolf.

**Duffy Silk Co.,** Buffalo, N. Y. Booths 347, 348. Thrown silk. Rep.: P. Hemmerich, C. G. Duff, Jr., C. W. Seidel, C. A. Lorenz.

**Duplan Silk Corp.,** New York. Booths 48, 49. Commission throwing. Rep.: G. Friedlander, W. S. Wheeler, Jr., H. H. Cannon, R. H. Griffith, G. E. Ward, D. L. Ryan.

**E. I. du Pont de Nemours & Co., Inc., Rayon Division,** New York. Booths 195, 196, 224, 225. Rayon yarns and fabrics made therefrom. Rep.: C. G. Hookey.

**John A. Eberly,** Reading, Pa. Booths 139, 152. See **Franklin Needle Co.**

**Ewing-Thomas Corp.,** Chester, Pa. Booths 33, 34. Thrown silk, mercerized yarns, metro-shade yarns, and fabrics made therefrom. Rep.: J. L. Rankin, H. A. Stafford, J. B. Pope, H. Crumbliss, G. Ellis, D. Thomas, J. J. Klumpp, M. B. Foil, J. O. Foil, C. V. Albright, C. F. Peffer.

**Fairchild Publications Co.,** New York. Booths 66-68. Textile publishers.

**W. F. Fancourt, Inc.,** Philadelphia. Booth 212. Soaps, oils, and specialties. New finishing and weighting oil; also featuring a one-bath waterproofing and finishing material and a splash-proof hosiery finish. Rep.: W. F. Fancourt, Jr., W. F. Fancourt, 3d, C. T. Harvey.

**Federal Machine Corp.,** New York. Booth 361AA. New type of throwing machines. Rep.: H. Sweetbaum.

**Fidelity Machine Co.,** Philadelphia. Booths 259, 260. Tubular knitting machines, and ribbers, demonstrating two-, three-, four- and five-color striping units in operation and in conjunction with attachments for laying in rubber covered yarns and rubber; machines include multiple feed tubing units and latest half and whole loose course four-feed ribber; also new multiplex ribber with revolving cylinder and unique pattern-selecting mechanism including the use of Lastex throughout the pattern; showing also improvements in winding of super-size bottle bobbins and back-winding of Lastex, braiding machine, belt loop cutter and lace trimmer; new design of electrically heated creasing machine for pockets of polo shirts and shaped parts on knitted garments. Rep.: H. W. Anderson, W. Larkin, E. A. Cordin, A. B. Davis, G. Collar, S. B. Blaisdell, G. Petrie, E. Warner, W. Whittaker, T. Wenner, F. Howard, A. Altemus.

**Filatex Corp.,** New York. Booths 3, 4. Filatex, latex yarns covered with silk, cotton, and rayon; also fabrics and garments made therefrom. Rep.: E. C. Persike, M. J. Frank, J. Hefter, H. B. Ketchum.

**J. A. Firsching, Inc.,** Utica, N. Y. Booths 313, 314. Automatic length cutting and laying-up machine especially designed for cutting of athletic shirts in short lengths; also Wonder collarette cutting and winding machine cutting two or more strips. Rep.: J. A. Firsching, Sr., R. A. Firsching.

**Fletcher Works,** Philadelphia. Booths 144-147. Extractors and throwing machinery. New 30-in. extractor; 40-in. Whirlwind extractor; Apex twister; Duplex doubler-twister. Rep.: R. J. Bartholomew, W. H. Rometsch, Jr., C. W. Moore, H. N. Rahn.

**J. B. Ford Sales Co.,** Wyandotte, Mich. Booth 307. Textile chemicals. Rep.: F. S. Klebart, J. F. Flaherty, H. E. Moyer, J. W. Turner.

**Foster Machine Co.,** Westfield, Mass. Booths 301, 302, 317. Precise-wind machines in operation with latest improvements and attachments for winding silk and synthetic yarns. Rep.: D. W. Bridgman, H. E. Swift, H. Cadle, R. W. Ensign, J. Wood.

**Franklin Needle Co.,** Franklin, N. H. Booths 139, 152. Knitting machine latch needles, sinkers, points, and guides. Rep.: G. L. Hancock, V. L. Eshelman, G. MacFadyen, A. L. Eshelman, J. A. Eberly.

**Franklin Process Co.,** Providence, R. I. Booth 379. Natural and dyed knitting yarns. Rep.: C. E. McElwee, G. A. MacGillivray, C. R. Ewing, B. S. Phetteplace.

**Friedberger-Aaron Mfg. Co.,** Philadelphia. Booth 18A. Elastic textiles. Elastic and trimming for underwear and hosiery; new design in waist-band elastic for tuck-stitch and rayon garments; also Lastex improved lace webs for knee-length hosiery and anklets. Rep.: G. C. Tanner, J. Stone, J. Decker.

**General Electric Co.,** Schenectady, N. Y. Booths 153, 154, 155A. New screenless, open textile motor; single-operator welding set; air-circuit breaker; motors; etc. Rep.: J. W. Sholder, F. C. Smith.

**General Electric Vapor Lamp Co.,** Hoboken, N. J. Booths 155-157. Cooper Hewitt industrial lighting units; combination Cooper Hewitt-incandescent units; three sizes of Type H mercury lamps. Rep.: C. F. Strebig, D. R. Grandy, W. R. Flounders, R. B. Chipman, F. Moos, L. F. Gerisch.

**General Hosiery Motor-Mend Corp.,** New York. Booth 207. Electric hosiery repair machine in operation on women's full-fashioned hosiery. Rep.: C. E. Mandelick.

**Grand Rapids Machinery Co.,** Grand Rapids, Mich. Booths 133AA. Machinery for dyeing, finishing, cutting, pressing. Following equipment displayed: Sample piece dyeing machine (metal), extractor loader and unloader, swatch dryer and steamer, new steaming, spreading and rolling machine; also universal calender and folder for tubular goods, hand cutting table for tuck stitch underwear fabric, roto press for pressing athletic shirts, underwear, sweaters. Rep.: W. H. Shields, W. F. Moon.

**Grove Silk Co.,** Scranton, Pa. Booths 9, 10. Thrown silk. Featuring motion pictures showing steps from the silk moth to the finished thread. Rep.: G. A. Schautz, A. G. Schautz, W. L. Schautz, W. T. Cheatham, F. J. Collins, G. J. Schautz, Jr.

**Haas-Miller Corp.,** Philadelphia. Booth 170. Textile chemicals, including a weighting agent for tubular-knit goods, a softener for underwear, and a water repellent. Rep.: C. J. Haas, H. L. Miller, W. Moon, W. Kirk.

**Hampton Co.,** Easthampton, Mass. Booths 179, 204. Cotton and rayon yarns. Rep.: H. McConnell, J. S. Blodgett, R. B. King, F. B. Handy, F. W. Kingsley, R. B. Lake, W. P. McCulloch, B. H. Rehbaum, W. H. Smith, W. T. Forbes, Jr.

**Harlem Knitting Machine Shop,** New York. Booth 133. Featuring 54-in. Universal steamer. Rep.: C. Feibel, Mr. McElroy, Anne Kappler.

**Oscar Heineman Corp.,** Chicago. Booths 319, 320. Silk and rayon knitting yarns. Rep.: R. H. More, F. E. Morey, D. G. Brewster, L. Wotan, C. D. Gott, N. P. Murphy, W. J. Crummer.

**Hellwig Silk Dyeing Co.,** Philadelphia. Booth 246. Dyed yarns. Line of colors on acetate yarn that will stand cross-dyeing; direct-dyed and resist-dyed silk; rayon and novelty yarns; also samples of piece goods, weighted and unweighted, dyed and finished. Rep.: W. J. Gutekunst, R. M. Gutekunst, H. C. Gutekunst, G. A. Smith.

**Hemphill Co.,** Pawtucket, R. I. Booths 99-104, 102A, 103A, 104A. Hosiery and fabric knitting machines. Three Banner machines operating on wrap-stripe knitting and one knitting wrap-stripe in combination with reverse-sinker plating; half-hose machine showing split-foot knitting by which the leg and instep, knit from a single cone of yarn, can be of constructions different from those in the sole of the socks; sinker-reverse plating on a Banner 25-step machine; 8-step wrap-attachment machine, 3½-in.; 19-independent-step wrap-stripe, 40 colors, 3½-

in.; combination 8-step wrap and 12-step reverse plating, 3½-in.; improved Banner split-foot machine, 3½-in.; 25-step sinker reverse plating, 3½-in.; 12-step reverse-plating machine with elastic attachment; 2¾-in. children's machine; new 20- and 21-in. Banner fabric machines of the combination sinker-needle measuring type. Rep.: R. H. Lawson, A. L. Hutton, Jr., J. D. Hobson, G. McDowell, J. McDowell, H. G. Gross, T. J. Tighe, R. Quinlan, A. Pelkey.

**John W. Hepworth & Co., Inc.**, Philadelphia. Booth 190. Looping machines in operation. Rep.: G. Keyser, J. J. Sander.

**Louis Hirsch Textile Machines, Inc.**, New York. Booths 197-199, 220-222. Karl Liberknecht full-fashioned hosiery machines, leggers and footers, and the Kalio Complet. Rep.: L. Hirsch, E. H. Hirsch, E. Ruckel.

**R. Hoe & Co., Inc.**, New York. Booth 194. Box cover end imprinting machine. Rep.: Robert W. Bodell.

**Alfred Hofmann, Inc.**, West New York, N. J. Booths 297, 298, 321, 322. Knitting machines. Type HSU machine demonstrating the knitting of single-unit stockings. Rep.: A. Hofmann, C. E. Weinberg, C. A. Kroenig, P. Schoenster, H. Wirth.

**Hosiery Patents, Inc.**, Lansdale, Pa. Booths 166, 167. Flexy carriers for full-fashioned machines. Rep.: B. Subin, F. Weisbecker, H. Buskirk.

**Howes Publishing Co.**, New York. Booths 131, 132, 159, 160. Textile publishers.

**Hungerford & Terry, Inc.**, Clayton, N. J. Booth 149. Inversand water softener, with gravel-retaining screen and Hardimeter; samples of various equipment and zeolites. Rep.: D. M. Hungerford, F. C. Myers, C. Hungerford, Jr., S. F. Alling, G. Lang.

**Hygrolit, Inc.**, Kearny, N. J. Booth 57. Hygrolit yarn-conditioning machinery; Model BDE/F2 for cone and package conditioning. Rep.: C. F. Dulken, H. E. Kresse, J. Winzurk.

**Industrial Dryer Corp.**, Stamford, Conn. Booths 11, 12. H-W conditioner and twist setter lined with stainless steel, and equipped with a 12-in temperature and humidity controller and recorder, electric time clock, and instruments for automatic operation. Rep.: C. M. Kitzmiller, G. D. Millspaugh.

**International Nickel Co., Inc.**, New York. Booths 13, 14. Mill and fabricated forms of Monel metal dye-house equipment, including dye cans, dye beam, spindles and perforated tube for package dyeing, piece goods dyeing equipment, starch cookers, dye-tank linings, dye sticks, utensils, and accessories. Rep.: E. A. Turner, C. J. Bianowicz.

**Loyal T. Ives Co.**, New Brunswick, N. J. Booth 163. Spring-beard needles, sinkers, jacks, and other parts used in knitting machines. Rep.: T. Whitlock, E. A. Quint, H. W. Thomas, W. W. Heath, R. Bergen.

**Jacquard Knitting Machine Co.**, Philadelphia. Booth 333AA. Circular jacquard knitting machines; also sample garments. Rep.: H. Albertman.

**Jasper-Groz Needle Co., Inc.**, New York. Booth 326. Latch needles and Pemco dye nets. Rep.: E. W. S. Jasper, E. L. Jasper, S. A. Farrand, S. Fenster, D. J. Meehan.

**Johnston Mills Co.**, Charlotte, N. C. Booths 246AA, 247AA. Cotton yarns. Rep.: J. W. Ferguson, W. W. Peters, F. N. Belk, W. J. Yates, W. B. Phelps, Jr., R. M. Bechtel, D. R. Jonas, J. S. Wilcox.

**W. H. & F. Jordan Jr. Mfg. Co.**, Philadelphia. Booths 20 and 20AA. Textile oils, softeners, and penetrants. Rep.: C. Jordan, H. B. Dohner, R. A. Bruce, J. McGrogan, G. C. Harkins, F. T. Quinlan.

**Kahn & Feldman, Inc.**, New York. Booth 181. Raw and thrown silk. Rep.: N. Lewis, R. Adams, J. O'Donoghue, C. W. Seidel, J. Kahn, G. Frank, C. W. Causey, Jr.

**Kaumagraph Co.**, New York. Booths 81-84. Dry transfers, embossed seals, lithographed packing and displays, Kaumark stamping ink, Transol solvent, and improved irons for transfer application. Rep.: G. M. Porges, S. W. Porges, A. F. Dooley, J. L. Reeves, H. A. Keech, A. D. Crawford, N. E. Griffith, D. O. Blevins.

**Klumpp-Glynn & Co.**, Philadelphia. Booth 371. Cotton yarns. Rep.: J. J. Klumpp, M. P. Glynn, Jr., T. Park.

**Knit Goods Publishing Corp.**, New York. Booths 77-80. Textile publishers.

**Laconia Needle Co.**, Laconia, N. H. Booth 183. Latch needles. Rep.: A. B. Sanborn, H. D. Sanborn, C. B. Paulus, W. H. Groat.

**W. T. Lane & Bros.**, Poughkeepsie, N. Y. Booth 309. Canvas baskets, shipping hampers, and trucks designed for hosiery mills. Rep.: R. T. Lane.

**R. K. Laros Silk Co.**, Bethlehem, Pa. Booths 52, 53. Commission throwsters. Rep.: R. K. Laros, G. A. Fenton, S. F. Burtis, P. Wilson, C. B. Asay, J. L. Gross, J. H. Harris, H. H. Huguenot.

**Laurel Soap Mfg. Co., Inc.**, Philadelphia. Booth 178. Textile soaps, oils, and finishing compounds. Rep.: C. E. Bertolet, W. H. Bertolet, Jr., A. H. Gaede, E. W. Seasongood, C. C. Hagelgans.

**Leatex Chemical Co.**, Philadelphia. Booth 37. Sulphonated oils of all kinds, boil-off and scouring oils, turkey red oil, penetrators, dyeing oils, delustrants, splash proofs, sizings and finishes for wet processing of warps, skeins and piece goods made of cotton, rayon, silk, wool, jute, etc. Rep.: John McChesney, J. F. Rieder, M. Guertin, C. L. Hammell, H. Higginbotham, L. Soistmann, R. R. Willgoos.

**Percy A. Legge**, Philadelphia. Booths 389, 390. Worsted, woolen, mohair, angora, and specially blended yarns; featuring Controlastic elastic yarn and products made therefrom. See **Andrews-Alderfer, Inc.** Rep.: E. D. Andrews, S. W. Alderfer, C. W. Neeld, Jr., O. McCurdy, W. Gilbert.

**Leighton Machine Co.**, Manchester, N. H. Booth 312. Circular knitting machine in operation and samples of fabrics made thereon. Rep.: A. B. Gould, F. C. Golden.

**Locke Cotton Mills Co.**, Concord, N. C. Booth 45. Cotton yarns. Rep.: C. L. Miller, H. T. Cosby, G. Thomas, F. L. Smyre, Jr., W. L. Steele, Jr.

**Lydon Bros.**, Jersey City, N. J. Booth 72. New line of twist-setting steam boxes for steam or electric operation; also cone conditioning and air-conditioning equipment. Rep.: J. V. Calhoun, D. Stapp, P. J. Lydon.

**Wm. A. P. MacKnight**, Philadelphia. Booth 308. Carded and combed cotton yarns. Rep.: W. A. P. MacKnight, F. H. Etherington, B. Etherington, Jr., C. J. Swift, A. E. Davis.

**Made-in-America Club**, New York. Booth 68. Sales promotion. Rep.: F. X. A. Eble, R. Beck, F. Fernau, J. Bux.

**Malina Co., Inc.**, New York. Booths 337, 338. Natural and converted rayon yarns. Rep.: L. Malina, I. J. Aibel.

**Markem Machine Co.**, Keene, N. H. Booths 275, 275AA. Marking and printing machines of all types. Featuring automatic cone sticker label printer, tag-marking machine, label and box printer, heavy-duty box and label printer, Presto power printer, Presto hand-operated label printer. Rep.: C. A. Putnam, C. E. Putnam, O. B. Meyers, H. D. Milton, D. F. Putnam, H. N. Lincoln, W. C. Gudney.

**C. R. McGinnis**, Reading, Pa. Booth 311. Carded and combed cotton yarns, merino and worsted yarns, spun silk and wool yarns, mercerized yarns, silk throwing. Rep.: C. R. McGinnis, T. L. Wilson, E. Jones.

**M. J. McHale, Inc.**, Scranton, Pa. Booth 77AA. Flyer wires, flyer box, steel ferrules, thread-guide holders, and porcelain hooks. Rep.: M. J. McHale, G. J. Dunleavy.

**Merkel Bobbin Co.**, Allentown, Pa. Booth 148. Combination Bakelite-head take-up bobbins and 5B bobbins; fibre-head bobbins; stainless steel and Merkel metal-head take-up bobbins; auxiliary mill equipment. Rep.: W. E. Kiefer, G. McGee.

**Merrow Machine Co.**, Hartford, Conn. Booths 332, 333, 352. Trimming and overseaming, overedging, plain crochet, and shell-stitch machines; new Class A models for overseaming and overedging operations on knitted wear.

**Clarence L. Meyers & Co.**, Philadelphia. Booths 295, 296, 323, 324. Durene, combed, carded, wool and silk, wool and cotton, wool and rayon, and cotton and rayon yarns. Rep.: C. L. Meyers, M. M. Meyers, G. C. Ballenberg, G. E. Mauerer, M. Meyers, C. E. Bender, H. W. Schrader, E. W. Fowler, H. J. Riebe, D. Strauss, L. Eschelbach.

**James E. Mitchell Co.**, Philadelphia. Booth 318. Natural and dyed cotton yarns, novelty and spun-rayon yarns. Rep.: J. J. Mitchell, Jr., R. H. Smith, R. Whitaker, J. J. Mitchell, 3d, A. W. Morton, Jr., A. Gagner, B. G. Murray, E. L. Merritt, Jr., E. E. Schwartz, F. S. Stover.

**L. P. Muller & Co.**, Philadelphia. Booths 149, 150. Natural and colored cotton yarns. Rep.: T. H. Nicholson, H. R. Pennington, H. D. Muller, H. G. Harper, J. T. Miller, L. C. Kinsey, A. M. Shaw, J. L. Muller.

**Narrow Fabric Co.,** Reading, Pa. Booths 240, 241, 254, 255. La-ce-lastic for underwear and knee-length hosiery. Rep.: I. N. Stiteler, G. Dudley, F. H. Klein, J. W. Sweeney.

**National Association of Hosiery Manufacturers,** New York. Booths 362-366, 381-385. Educational display showing advantages of the nine-meter test for evenness, photographs of cleanness defects in various sizes of silk yarn, fabrics showing various cleanness defects; also exhibit of some of the work done by the research department. Rep.: E. M. Schenke, H. E. Shearer.

**National Bundle Tyer Co.,** Blissfield, Mich. Booth 65. Show single and double tie Saxmayer machines. Rep.: Mr. Reitzes, Mr. Fox.

**National Vulcanized Fibre Co.,** Wilmington, Del. Booth 136. Vulcanized fiber and Phenolite in form of sheets, rods, tubes, and special shapes. Rep.: T. B. Baldridge, J. G. Beasten, J. S. Tatnall, J. K. Johnston, H. C. Hackett, F. I. Crow.

**Onyx Oil & Chemical Co.,** Jersey City, N. J. Booth 184. Finishing compounds. New Silk-O-Ray for silk hosiery and rayon to give better hand and appearance; also samples of degumming, dyeing, dulling, spot-proofing, and other compounds. Rep.: C. D. Ehrengart, L. P. Brick, J. W. Huber, E. A. Brick, J. E. Trezise, E. W. Klumph.

**Paramount Textile Machinery Co.,** Chicago. Booths 230, 231, 248, 249, 250, 251. Hosiery drying machines, forms and tables, inspection machines, looper attachments. Rep.: H. Pope, L. H. Oswald, T. W. Prosser, L. S. Kleinfeld, J. Pope, W. H. Albertson, W. L. Coggins, O. A. Siegel, J. J. Biselx, T. K. Long, Anne Donnelly.

**Paramount Winding Co.,** New York. Booth 151. Natural and dyed cotton, rayon, and novelty yarns. Rep.: J. Wasserman, E. I. Reynolds.

**Park Avenue Studios,** New York. Booth 171. Hand-colored photographic display cards for hosiery and underwear. Rep.: S. N. Rosenstein.

**Permutit Co.,** New York. Booth 310. Water-purification equipment. Portable Ranarex CO2 indicator; manual and fully automotive valve for control of water softeners; samples of three types of mineral used for water softening, synthetic and processed. Rep.: D. J. Hess, M. F. Corin, W. Lowrie, E. O. House.

**Geo. B. Pfingst, Inc.,** Philadelphia. Booths 294, 325. Silk yarns. Featuring direct-running yarns and new high twists. Rep.: G. B. Pfingst, B. Pfingst, J. J. Jacobs, J. P. Reynolds.

**Philadelphia Drying Machinery Co.,** Philadelphia. Booth 175. Drying machinery for raw stock, yarns, packages, and piece goods; carbonizing equipment; tenter dryers; vacuum extractors; etc. Rep.: W. W. Sibson, H. O. Kaufmann, C. H. Reumann, B. M. Jones.

**Philadelphia Metal Drying Form Co.,** Philadelphia. Both 168, 185. Hosiery drying and finishing equipment, tissue and Cellophane inserting machines. Rep.: P. Guggenheim, J. Seligman, E. Wolff.

**Pickett Cotton Mill,** High Point, N. C. Booths 35, 35AA. See **Boshamer & Co.**

**Max Pollack & Co., Inc.,** New York. Booth 6. Sewing threads. Rep.: J. Pollack, A. W. MacBride, C. L. Darlington, J. D. Corbett, C. A. Warnock, T. W. Mills, J. S. Johnson.

**Proctor & Schwartz, Inc.,** Philadelphia. Booths 232, 233, 242, 243, 252, 253. Boarding machines. Featuring two types of machines, one for women's stockings, and one for men's half-hose. Rep.: Maj. C. T. Griffith, C. S. Tiers, H. B. Lex, W. J. Merrigan.

**Quaker Chemical Products Corp.,** Conshohocken, Pa. Booth 376. Textile chemicals, including boil-off, needle, and stainless oils; delustrants; detergents; softeners; penetrants; kier assistants; weighters; and silk oils. Rep.: E. Niessen, R. K. Gurney, J. Zurn, G. Lobb, H. N. Kopple, J. W. Brown, Dr. A. Krueger.

**Queens Machine Corp.,** Brooklyn, N. Y. Booths 88A-88D. 88-in., 9-gage automatic links machine with special nine-fold selective automatic rack; flat, double-head boarder machine; hand links machine; unit-circular string or boarder machine. Rep.: M. Zimic, Mary Zimic, M. Kuehne, J. Schneider.

**Rayon Publishing Co.,** New York. Booth 68AA. Textile publishers.

**Reece Button Hole Machine Co.,** Boston. Booths 334, 335. Buttonhole and button-sewing machines. Rep.: J. H. Pikul, F. O. Paul, F. A. Reece, Jr.

**Robert Reiner, Inc.,** Weehawken, N. J. Booths 360, 361, 386, 387. Hosiery and other textile machinery. Featuring S&R 28-gage, 168-in. English tricot machine in operation; also sectional Schlick beaming machine. Rep.: F. Lambach, A. Rinehart, Dr. R. Reiner, W. Dostmann.

**Chas. Reitzes,** Philadelphia. Booth 65. Saxmayer machines for automatically tying bundles, boxes, and packages. Rep.: C. Reitzes, H. L. Reitzes, H. Fleischer.

**Republic Steel Corp.,** Cleveland. Booths 40-43. Enduro stainless steel articles, such as experimental bleaching kier, expander arrangement, tenter-frame clip, roller bearings, miniature jig tub, miniature dry can and liner, dye jig, humidifying unit, utensils, pails, dippers, and other fabricated articles. Rep.: C. C. Snyder, G. W. Hinkle, L. L. Caskey, E. S. Dehn, E. C. Anderson, J. K. Bole, W. H. Oliver, H. N. Evans, A. W. Minuse.

**Robaczynski Machine Corp.,** Brooklyn, N. Y. Booths 129, 130, 161, 162. Full automatic power transfer links-and-links machine and hand transfer links-and-links machine to conform; also high-speed flat type border machine and high-speed circular tubing machine. Rep.: L. Robaczynski, W. F. Cohen.

**Rochester Engineering & Centrifugal Corp.,** Rochester, N. Y. Booths 213, 214. Two sizes of dyeing machines, constructed with Monel metal tub and cylinder, motor drive, etc.; also two types of extractors with Monel metal curbs and baskets. Featuring spot welding of the cylinders of the dyeing machines eliminating rivets and bolts; also the hand-honed baskets of the extractors. Rep.: R. C. Caine, P. B. Compton, C. F. Fischer.

**Rose Mills, Inc.,** Philadelphia. Booths 164, 165. Novelty yarns. Rep.: H. G. Schnitzler, A. G. Adams, J. Green, P. A. Barker.

**Royal Metal Mfg. Co.,** Chicago. Booth 2. Metal stools and chairs for industrial use. Rep.: H. A. Green, W. A. Braun, R. S. Snyder, E. L. Forstner, F. W. Eickhoff.

**Royersford Needle Works, Inc.,** Royersford, Pa. Booths 350, 351. Springbeard needles, sinkers, dividers, knock-over bits, jacks, etc. Rep.: Fred Heller, F. Heller, D. Breidenbach.

**Russell Mfg. Co.,** Middletown, Conn. Booth 293. Woven elastic webbings for use on underwear, knee-length hosiery, and men's half-hose. Featuring open-work Lastex fabric for full-fashioned knee-length hosiery, and a complete line of mystery web. Rep.: D. H. Byerly, P. L. Howard, R. S. Hastings.

**San-Knit-ary Textile Mills,** Philadelphia. Booth 38. Nets for dyeing hosiery and for silk throwsters. Featuring fabrics to be used in processing sheer silk hosiery. Rep.: J. E. Casper.

**Sauquoit Silk Mfg. Co.,** New York. Booth 380. Silk yarns for hosiery. Rep.: A. Gavaghan, T. Cowan.

**Scholler Bros., Inc.,** Philadelphia. Booths 215, 216. Soaps, softeners, sulphonated oils, finishing compounds. Rep.: E. S. Atkinson, J. F. Noble, G. Pickering, L. M. Boyd, W. Jackson, Jr., H. Miller.

**Harry Schwartz,** New York. Booth 36. Novelty yarns. Rep.: D. Schwartz, H. Schwartz.

**Scott & Williams, Inc.,** New York. Booths 105-116. Knitting machinery. Featuring 25-step K spiral gusset-toe machine in fine gages, equipped with elastic welt and gusset square heel attachments; complete line of half hose including HH-PW machines, and HH 25-step spiral and the HH-NRP machines, equipped with various attachments, including the crinkle-top attachment for laying in rubber; complete line of machines for making English broad-rib hosiery in plain, striped, two-feed and fancy pattern effects; also Standard Trump 80W shog machine, with 80 wrap yarn fingers and 25 steps for patterning; Scott & Williams 36-wrap, 18-step ES machine, with striping attachment and the new and improved color-in-color-and-beside-color attachment. For children's anklets, socks and half-socks, a 70-gage Standard H machine with striping attachment and a 54-gage Standard H machine with striper and crinkle-top rubber-laying-in attachment; for underwear and other special fabrics, the automatic double-butt tuck machine and the new automatic double butt tuck and float machine.

**Sees & Faber Co., Inc.,** Philadelphia. Booths 15–17. Hosiery knitting and manufacturing supplies. New friction clamp and new chain plier. Rep.: A. Beetle, F. Beechley, R. Reuther, E. Reihler, J. Dietriek, H. Schwarz, R. W. Sees.

**Sellers Mfg. Co.,** Saxapahaw, N. C. Booth 143. Knitting yarns.

**Singer Sewing Machine Co.,** New York. Booths 191–193, 227–229. Sew-

ing machines, part of which are mounted on the Universal safety two-shaft power table, and the balance on electric transmitter power table. All machines are equipped with the Singerlight fixture. Featuring Classes 95 and 150W high-speed lock-stitch machines, and 231-4 and 134-W-3 types of feed-off-the-arm machines. Rep.: H. C. Morehouse, P. R. Mohney, A. H. Baiter, L. V. Peak, E. Stone, J. Vollman, D. Smith, C. F. Nicholson, G. S. Snow, R. S. Dunn, J. H. Rockerath.

**Smith, Drum & Co.,** Philadelphia. Booths 21–30. Hosiery, skein, package, and piece goods dyeing equipment; also auxiliary equipment. Rep.: H. S. Drum, W. C. Dodson, J. E. MacDougall, J. M. Ballentine, P. Parrott.

**A. M. Smyre Mfg. Co.,** Gastonia, N. C. Booth 44. Cotton yarns. Rep.: H. T. Cosby, W. G. Thomas.

**Sonoco Products Co.,** Hartsville, S. C. Booth 158. Paper carriers and cones, tubes, spools, etc.; also cork cots and equipment for installing same. Rep.: W. B. Broadbent, W. A. Biggs.

**Southern Knitter,** Charlotte, N. C. Booth 73. Textile publisher.

**Southern Textile Machinery Co.,** Paducah, Ky. Booths 329, 330, 355, 356. Standard dial and cylinder loopers and looper room accessories. Dial and cylinder loopers. Rep.: J. T. Balthsar, R. N. Parkin, Chas. Holcomb.

**E. O. Spindler,** New York. Booths 369, 370, 377, 378. See **Dubied Machinery Co.**

**Spool Cotton Co.,** New York. Booth 226. Threads for all types of sewing machines used in knitting industry. Featuring new threads developed for Fastlock machine. Rep.: W. S. Kennedy, E. A. Smith, Jr., C. W. Sutcliffe, Jr., A. Peklo, Jr., M. G. Davies.

**Standard-Coosa-Thatcher Co.,** Philadelphia. Booth 167AA. Durene yarns, sewing threads; natural, dyed, bleached. Rep.: R. J. Mathewson, J. S. Verlenden, W. H. Thatcher, C. F. Smith, M. A. Henderson, J. P. Rickman, W. S. Lawson, C. D. Harris, W. M. Hall, E. R. Dillmore, R. B. Lewis.

**Standard Oil Co. of Pennsylvania,** Philadelphia. Booths 54, 55. Various petroleum products applicable to the textile industry. Rep.: C. N. Watson, J. A. Klopp, M. W. Collins, Jr., S. Ebling, M. E. Richman, J. M. McNamara.

**Supreme Knitting Machine Co.,** Brooklyn, N. Y. Booths 372, 373. Jersey circular knitting machines. Rep.: B. R. Ebersman, H. Agulnek, S. Mishcon, L. Mishcon.

**H. Sweetbaum & Co.,** New York. Booth 361AA. Silk yarns.

**Textiles, Inc.,** Gastonia, N. C. Booths 201, 202. Cotton yarns. Rep.: A. W. Latta, W. T. Rankin, Jr., P. H. Thompson, G. T. Hutchinson, H. D. Skinner, L. F. Warren, H. G. Dolliver, J. A. Whelan, A. W. Latta, Jr., A. A. Dinsmore, Jr., S. G. Haigh, J. T. Craig.

**Textile Machine Works,** Reading, Pa. Booths 261-265, 282-286. Knitting machines and accessories. Rep.: N. E. Richards, E. A. Shoemaker, R. W. Weaver, P. Kroener, H. Printz.

**Textile World, New York.** Booths 89–92. Textile publishers.

**Tompkins Bros. Co.,** Syracuse, N. Y. Booths 374, 375. Circular spring and latch needle knitting machinery. Spring-needle machine with stripers; also four-color hockey cap machine. Rep.: W. A. Ingalls, G. L. Logan, G. Bennett.

**Torrington Co.,** Torrington, Conn. Booths 270–273. Knitting machine needles, sinkers, and dividers; sewing machine needles; bearings.

**Tubize Chatillon Corp.,** New York. Booths 357, 358. Variety of rayon knit fabrics made in own knitting mill and in mills of yarn customers. Rep.: E. H. Bogardus, E. D. Bryan, J. R. Morton, H. Gold, F. R. Scull, N. B. Richardson, L. F. Smith, M. M. Wise.

**Tubular Textile Machinery Co.,** New York. Booths 58-60. See **H. W. Butterworth & Sons Co.**

**Underwear and Hosiery Review,** New York. Booths 77–80. Textile publishers.

**Union Special Machine Co.,** Chicago. Booths 266, 267, 281, 303, 304, 315, 316, 339, 340. Industrial sewing machines. New hosiery seamer for closing the back seams on full-fashioned hosiery. Also machines for binding panties; for seaming, hemming and overedging knit goods; for hemming elastic goods; for hemming and seaming underwear; for attaching lace; for hemming necks and armholes of outerwear; for folding and attaching buttonhole facings; for miscellaneous lock-stitch operations; for picoting; and for felling. Safety tables manufactured by American Safety Table Co. Rep.: T. S. Whitsel, N. V. Christensen, C. S. Thompson, A. E. Brauch, A. S. Riviere, A. J. Feigel, C. E. Stevens, W. E. LeRoy, E. E. Gratsch, T. M. Murphey, W. Bleicher, P. J. Steeper, P. T. McLendon, J. M. Biddle, G. A. Rundle, S. J. Storey, L. F. McGwier, H. A. McGwier, F. A. Jorgensen, W. J. Brauch, C. F. Riebel.

**United Elastic Corp.,** Easthampton, Mass. Booths 134, 135. Elastic web for underwear, hosiery, and bathing suits. Rep.: W. E. Dalby, G. S. Van Voorhis, H. O. Hollingworth, E. R. Boehm, R. A. Waite, W. H. Smith.

**U. S. Ring Traveler Co.,** Providence, R. I. Booth 200. Various styles and sizes of ring travelers. Rep.: M. L. Bolton, A. M. Bowen, H. J. Smith.

**United States Testing Co.,** Hoboken, N. J. Booth 349. Testing equipment. Featuring demonstration of newly perfected "Flexease" tester to measure flexibility of thrown silk yarn. Rep.: A. L. Brassell, S. B. Walker, G. R. Turner, H. M. Block.

**U. S. Textile Machine Co.,** Scranton, Pa. Booth 79AA. Line of silk and rayon throwing equipment. Rep.: A. W. Thomas, P. J. Thomas, G. M. Wescott, E. L. Townsend.

**Universal Winding Co.,** Boston. Booths 123–128. Winding machinery for handling cotton, silk, and rayon yarns and various packages. Featuring the Roto-Coner, improved No. 50 machine, and No. 90 machine equipped with Disc-Quil tension. Rep.: R. A. Leeson, E. O. Smith, R. Leeson, T. L. Cotter, R. L. Chisholm, E. S. Broadbent, W. J. Quinn, W. S. Warren, A. I. Harvey, J. W. Stribling, R. M. Mauldin, I. E. Wynne.

**Van Straaten & Havey,** Philadelphia. Booths 60A, 60B, 60C. Silk knitting yarns. Rep.: C. D. Havey, A. Van Straaten, T. W. Wilson, J. Kester, M. Smith, J. Monahan.

**Victor Ring Traveler Co.,** Providence, R. I. Booth 203. Ring travelers. Rep.: J. A. Hull, B. H. Waterman, E. R. Jerome.

**Viscose Co.,** New York. Booths 276, 276A, 277, 277A. Rayon yarn and knitted fabrics. Also spun rayon yarn and fabrics. Rep.: M. H. Morse, T. H. Andrews, W. D. Benson.

**A. Wachsman,** Brooklyn, N. Y. Booth 172. Stop motions for knitting machines.

**S. Walter, Inc.,** Philadelphia. Booth 169A. Paper specialties for hosiery. Rep.: E. S. Rains.

**Warwick Chemical Co.,** West Warwick, R. I. Booth 336. Impregnole water repellent and other specialties. Rep.: Dr. D. S. Chamberlin, W. Oseasohn.

**Waterman Currier & Co., Inc.,** Boston. Booths 346, 367. Natural and dyed, carded and combed cotton yarns; also mohair, worsted, and worsted-spun rayon yarns. Rep.: S. E. Fulton, W. S. Banks, E. W. Eddy.

**Whiting Patterson Co., Inc.,** Philadelphia. Booth 177. Cellulose hosiery envelopes, inserts, etc. Rep.: W. P. Nickerson.

**William Whitman Co., Inc.,** New York. Booths 205, 206. Worsted, merino, and worsted-spun blend yarn; carded and combed cotton yarns, natural and mercerized; spun rayon, spun acetate, and blend yarns. Rep.: M. G. Decatur, J. J. Devlin, W. A. Fuller, H. S. Hicks, M. H. Horchler, P. L. Lamb, H. C. Leswing, K. N. Merrill, J. K. Robinson, J. L. Stickley, W. C. Strugnell, J. E. Varney, R. J. Walsh.

**Wildman Mfg. Co.,** Norristown, Pa. Booths 93–98. Circular machinery for production of underwear, girdles, and bathing suits; also single-section, single-unit, full-fashioned hosiery machines. Rep.: K. Howie, F. E. Paul, J. J. Brennan.

**Willcox & Gibbs Sewing Machine Co.,** New York. Booths 289–292, 327, 328. Industrial sewing machines. Featuring the Fastlock machine for the closing operation on knee-length hosiery; also the Flatlock machine. Rep.: G. M. Lewis, A. E. Selby, N. Wonnacott.

**Wolf Bros.,** Philadelphia. Booth 38A. Paper, Cellophane, and specialty hosiery bags. Rep.: W. P. Brockermann, Jr., P. R. Brockermann, G. Bauer, J. Hedges, M. Gropper, H. Wolf, W. Wolf.

**Jacques Wolf & Co.,** Passaic, N. J. Booth 353. Chemical specialties, including boil-off, sulphonated, soluble-silk oils; softeners; waterproofing, stripping, penetrating, and wetting-out agents. Rep.: F. G. Henckel, G. J. Desmond, A. Pfister, C. J. Rahm, M. F. Costello, C. E. Wright.

**Thos. Wolstenholme Sons & Co., Inc.,** Philadelphia. Booths 305, 306. Worsted yarns. Rep.: L. F. Schaeffer, F. S. Krecker, G. C. Zimmerman, L. F. Schaeffer, Jr.

# The Short of It

## *Men's hosiery adopts the anklet permanently*

By Col. H. W. Scruton
*Vice President*
*Interwoven Stocking Co.*
*New Brunswick, N. J.*

IN the last few years the men of this country have declared themselves, by their purchases, to be very definitely in favor of comfort in dress, providing they do not have to make any sacrifices in the way of style to attain this end. There has been a decided swing toward lighter and more porous fabrics in garments and abbreviated apparel for play, such as shorts for tennis and trunks for swimming. The difference in the weight of men's and women's summer clothing is growing less and less.

Perhaps one of the major changes during the last few years has taken place in socks. Late in 1933 and early in 1934 hosiery manufacturers timidly offered abbreviated socks, which came to be known universally as anklets. This was rather an effeminate name; but as a result of constant use since, no one now considers it unsuitable.

Short socks reaching just above the ankles, such as "gym socks," have been worn for years. They early made their appearance outside for tennis and golf. However, it was not until 1933 or 1934 that men started to wear them with slacks for lounging around.

These early anklets were rough, crude-looking pieces of merchandise compared with the present 1937 model. None of them was made with Lastex. The first samples were about 8 in. in all-over leg length. Some were made with a short rib of single thickness, but this bulged at the top. They were unsightly and drooped down, presenting a very untidy appearance. The best of the early models had ribs, which were turned under and sewed close to the line where the rib joins the body of the anklet. They did not bulge out at the top and roll down over the ankle like those made with only one thickness of fabric; but they were far from neat because, as they were not self-supporting, wrinkles were inevitable. Because of the double thickness, they were as heavy as a regulation-length sock.

Up to this time, practically all anklets were worn by men participating in sports and by college and high-school students on the campus, many of whom had already formed the habit of wearing socks without garters.

Starting with 1935, alert manufacturers saw possibilities in the promotion of anklets for wear with business clothes. They became available in numerous patterns. Practically all of them were made with a few rounds of Lastex at the top. Of the two lengths offered—10 and 8 in.—the shorter soon became the favorite.

In the spring and summer of that year, we at Interwoven offered 123 different styles of light-weight, fancy anklets. They became popular almost over night, and we were amazed to find that 20% of our fancies were being purchased in anklets. Further improvements in construction were made in 1935; and by 1936 our spring and summer line had grown to 211 styles, which, in that period, accounted for 22½% of our fancy business.

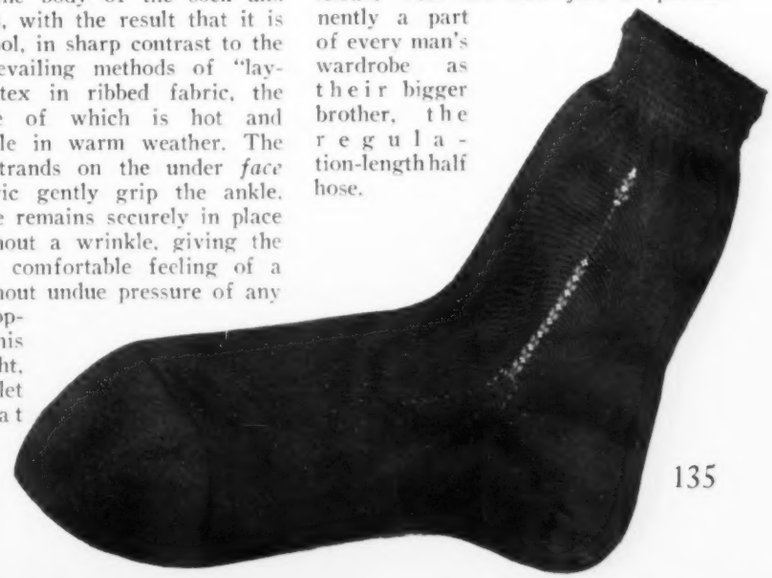
The crude, sloppy anklets of 1933 and 1934 had become trim and neat with as much style as regular half hose. They were all made with the now famous "Nu-Top" feature. This exclusive Interwoven method of making self-supporting socks consists of knitting horizontal strands of Lastex at regular intervals, both vertically and horizontally, on the under face of the fabric. This fabric is exactly the same weight as the body of the sock and quite porous, with the result that it is unusually cool, in sharp contrast to the common prevailing methods of "laying-in" Lastex in ribbed fabric, the very nature of which is hot and uncomfortable in warm weather. The horizontal strands on the under *face* of the fabric gently grip the ankle, and the hose remains securely in place all day without a wrinkle, giving the wearer that comfortable feeling of a snug fit without undue pressure of any kind. So popular has this light-weight, fancy anklet become that our line for spring and summer, 1937, has 421 different styles, exclusive of plain staple anklets.

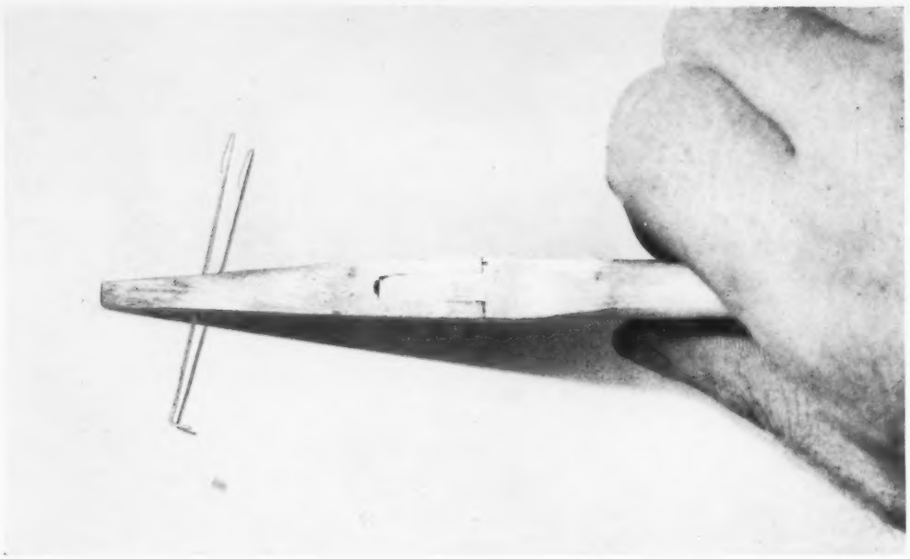
On March 11th of this year a sales analysis showed that 32½% of our entire fancy business was on anklets. This means that they will be worn this summer by one out of every three men in this country.

Some sections of the country have "gone" for anklets more than others. The Pacific Coast, the South, and the Middle West are very large buyers of anklets. They are worn all year round in the warmer States and are more popular with the younger generation. I doubt very much if any will be found in the wardrobes of the Justices of the Supreme Court.

While this modern trend has made it necessary for the retailer to carry not only a complete range of fancy and staple half hose, but anklets as well, increasing his investment over previous years, it has helped materially to increase his volume in men's hosiery. The popularity of anklets is mainly responsible for this, because four years ago a man's wardrobe consisted only of regulation-length half hose, while today he must have almost as many half hose, plus a variety of anklets, for wear with his different suits. Many manufacturers and retailers have not welcomed this new style, which is now very definitely a fashion, forgetting entirely the additional business they have enjoyed from this one source alone.

Light-weight anklets for business and leisure wear are now just as permanently a part of every man's wardrobe as their bigger brother, the regulation-length half hose.





*Machine adjustments are of little avail if the knitter does not plier his needles straight*

# Kill the Hosiery Stripe

## *By adopting systematic machine maintenance*

By Charles O. Simms

VERTICAL stripes are the most serious problem we have to contend with in the full-fashioned hosiery industry today, and any stocking that contains them is classed as a second without much ado. Both buyers and consumers are aware of their presence; and, therefore, unless the manufacturer eliminates them, his product will not command the highest prices.

When a machine deteriorates to the point where lines are extremely chronic, replacement of inside parts and an overhauling of cams where justified are the only one-hundred per cent cure for the evil. The undertaking is an expensive one, and the need for it may be postponed by the taking of certain important precautions as the lines develop. They do not crop up en masse over night, but appear one by one over a period of time as parts become worn. In some cases, misadjustment of machinery aggravates the trouble and the indifference or carelessness of knitters lends a hand.

The main purpose of the system about to be described is to delay the expense of rebuilding while still producing hose which when finished will not contain noticeable stripes.

### Uniform Sinker Length

A new or rebuilt machine that has been operating for several years is naturally beginning to show signs of wear. From continual striking by the jacks, the sinkers have become worn at the butt, often as much as four thousandths of an inch. When a new sinker is placed in a head containing this type, it is longer than the old sinkers and will make a loose stripe in the majority of cases. It will feed more thread to the needles and at the same time "rob" some of the yarn from the shorter sinkers on each side. Therefore, it is never good policy to replace an old sinker with a new one.

An advisable procedure to follow is to resinker the whole head, saving the old sinkers to be used as needed over other parts of the machine. In this way there is an assurance that all sinkers will be as nearly uniform as possible, which is of paramount importance. When resinkering is done, the jacks and verge plate should be filed.

Sinkers should never be used beyond the time it is observed they are impairing the quality of the fabric. Under no circumstances should we insert sinkers which are of different make from those already in the machine. Sinker manufacturers have their own ideas about the design of these parts, and slight variations in their size make it impossible to use several brands in the same head without dire results.

The above also applies to jacks, which wear as readily as sinkers. Jacks of uneven length will cause no end of lines. A long jack will drive its particular sinker farther forward, having the same effect as that of a new sinker being used with the old. A short jack will inevitably cause a tight line, because the exact opposite takes place.

Jacks must be replaced from time to time due to smashes, etc.; but the new parts should be inserted at the end of the head, and the old jacks used for the actual replacements, this procedure insuring maximum uniformity. The head should then be filed before it is returned to the machine, as explained in an excellent article by A. J. Cobert in the March, 1936, edition of TEXTILE WORLD. It would be wise to remove a full head of old jacks and use them as needed, as in the case of sinkers. If trouble is encountered with stripes when the new jacks are replaced, the head should be taken out and filed.

### Straight Needles Required

Needles of different manufacture should not be used in the same machine, as there is a decided difference in temper and sometimes thickness and length. When a new machine is installed, or a machine reneedled, the brand of needle then used should be continued until at least the next reneedling. Needles produce three distinct types of lines—tight, loose, and the single loose loop caused by a heavy or bent needle.

It is here also the knitter enters into the picture. If he be a poor needle

man, or slack in his needle pliering, the bellied needles he puts in the machine will sooner or later cause some form of stripe. A knitter who is careful with his needles is a valuable asset, for his machine will run for a longer period of time without having to be reneedled because of lines.

We shall assume that a knitter places several needles in a row in the machine and they are all bellied toward the sinker head, or in. When he tightens the plate, it is necessary for him to pull those needles back so they will line with the rest. This is the beginning of a tight line, because he lines the needles by looking at the tops and that part of the needle upon which the size of the stitch depends is farther away from the sinkers. This does not permit those needles to relieve as much thread as the ones on each side. Needles that are bellied out, or away from the sinkers, will have the directly opposite effect.

It does not take a great length of time to produce an endless number of stripes when this sort of thing transpires every day. Not only will early reneedling of the machine be necessary, but the fabric in the meantime will not be of good quality. Needles that are bent while turning welts tend to make a single loose line if not straightened back properly and are best removed when the accident happens. Occasionally needles having the beards raised too high will cause the faintest trace of a line. Several of these in a row will make a noticeable streak.

### Misalignment of Machine

Misalignment contributes to some extent to the formation of stripes, especially on machines where the slots in the sinker heads are extremely worn. This allows the sinkers and dividers to rise while the needles are traveling down to deliver the stitch to the knock-over bits. A needle head that has dropped brings the loops off too tight, and, because the sinkers and dividers do not all rise the same distance, they distort the stitch, a distortion the knock-overs cannot rectify. A needle bar that is screwed in will have practically the same effect. Catch bars set too far forward and too much press on the roller adjustment cause this condition to be general. Where the up-and-down play in sinkers and dividers is abnormal, it is suggested that to alleviate the distortion of the stitch, the machine be set so that the stitch is as free as possible when it comes off the sinkers and dividers. This may be accomplished in various ways, the selection of which must be left to the discretion of the fixer.

### Slur-Cock Setting

When the play in the sinkers becomes too great between the verge plate and the jack, which in turn is controlled by the slur cock, the sinkers do not come forward firmly enough to hold in place the thread they are feeding to the needles. Too much space at this point causes the sinkers to move sluggishly and permits them to slip back, some further than others, producing hose with extremely tight and loose stripes. A divider placed between the sinkers and the verge plate while the slur cock is in motion should fit fairly snug. To get this setting will necessitate filing or packing of needle-bar hinges at times and the moving of verge plate or sinker head, but maintenance of this setting is a means to better fabric. Slur cocks and verge plates must be kept straight with this close adjustment to prevent jamming of the sinkers against the verge plates.

### Supplementary Details

If there be several tight and loose lines to be eliminated from certain sections, an interchange of the respective sinkers will sometimes overcome the fault. In other words, the sinkers making the tight line can be taken out and exchanged with those forming the loose line. This should be done only after it is ascertained that the needles are straight. If the stripes persist, new sinkers may be used where the tight line is being knitted, and the loose stripe may be ultimately conquered by grinding two or three thousandths off the butts of the offending sinkers. If the lines still persist, the jack head is the last resort and should be taken out and filed.

Jack springs should be checked and fitted properly, for springs that slip off occasionally make a tight line. If they cannot be centered to the jacks as a whole, they should be taken off and lined.

Invariably it takes several different adjustments to clear a bad head up entirely, even after the sinkers and needles have been checked or replaced. Usually it is a complication of ills which makes a head streaky, and the person intrusted with the work must be skilled enough to diagnose the trouble without too much waste of time and wrong adjustment of machinery. It is advisable to employ a fixer for this work.

Two dozen a day is an ideal inspection quantity. This amount from each machine will not run the cost of inspecting too high, and it is enough to bring the developing of stripes to light. Of course all stockings are numbered according to the section from which they are run so that they may be easily checked when sent back to the knitting room.

### Record Chart

A book of charts such as the accompanying one is made up in loose leaf form one page for all sections of each individual machine. When a jack head or verge plate is filed, a sinker head refilled, or a head reneedled, the date is put in the proper column for that particular operation. This record is invaluable for future reference. The fixer can always refer to the book when a certain head is running very streaky and will be informed at a glance just what steps have been taken with that head in the past. This saves time and work that might prove unnecessary.

If the stripes are taken out as they appear, or kept to the point where they do not degrade the finished hosiery, the cost of rebuilding may be postponed until the insides have actually expended their normal life. Too many machines containing parts that are in fairly good condition have to be overhauled because unevenness has been allowed to creep in slowly. With adequate maintenance in such cases, the difficulty and expense of early rebuilding might have been avoided.

**MACHINE NO. 1**

| Sections | Jacks Filed | New Jacks | Verge Plate Filed | Re-Needled | New Sinkers |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | 2/7/37 | | 11/20/36 | | 11/2/36 |
| 3 | | | 11/21/36 | | |
| 4 | | 1/15/37 | | 1/20/37 | |
| 5 | | | | | |

*Top of machine-record chart, one page of a loose-leaf book which will disclose at a glance what has previously been done to any section of any machine*

# New Elastic Yarns

## *Filatex and Controlastic youngest members of growing family*

WITHIN the last year two new members have been added to the growing family of elastic textiles. These newcomers, Filatex and Controlastic, like all children of the same parent, have some points in common, but also have individual distinguishing characteristics.

Lastex, the lusty six-year-old member of the family, has proved to be a real infant prodigy, and has gained wide acceptance. This yarn is now definitely and substantially established for a wide diversity of uses in the world of textiles. The background story of Lastex is too well known to need more than passing reference here; indeed its success has been so pronounced, both in the standard textile fields and in important new fabric divisions which Lastex itself has made possible, that it may now be regarded as a staple product.

It is too early yet to gage the future of Filatex and Controlastic, the two youngest children of latex. However, even in their short commercial life to date they have attracted such extended and favorable attention as to lend interest and value to a picture of them as they are today.

### Methods of Manufacture

Although latex is the starting point in the manufacture of the types of elastic yarn under consideration, the production methods and the resulting products differ in several details. As indicated in our January, 1933, issue, Lastex, the first type to be developed, is produced by extruding latex through a nozzle, and recovering the solid constituents in the form of a continuous thread, which is usually round in shape; this thread, while held under tension, is covered with right and left helical windings of a relatively inelastic fibrous yarn of cotton, rayon, silk, or wool. The biggest advantage claimed for Lastex, over the older types of covered cut-rubber threads, is its extreme fineness, which permits it to be knit on fine-gage machines and woven into semi-sheer fabrics. Manufacture of Lastex is covered by U. S. Patents Nos. 1,545,257 and 1,822,847.

In producing the elastic core around which fibrous yarns are wound to form Filatex, latex, instead of being extruded through a nozzle, is picked up by a revolving, heated, grooved wheel, on which it is coagulated and dried before being drawn off continuously as a strip or thread through a tank of dusting powder onto a spool. The shape of the thread is dependent on the cross-section of the groove. If a flat strip or ribbon is produced, it can be twisted to give a substantially cylindrical thread having any desired number of turns per inch. The thickness of the ribbon may be as low as 0.008 in. and may have a width of about 0.012 in. The thread produced in this way is covered with one or more helically wound layers of silk, cotton, or other yarn to form a composite elastic yarn suitable for use in knitting or weaving. This method is covered by U. S. Patent No. 2,037,031.

Controlastic differs from both Lastex and Filatex in that the composite elastic thread comprises a laminated tubular envelope of rubber and a core of cotton, rayon, silk, or other fibrous yarn. The composite thread, in turn, can be covered with fibrous yarns in the usual manner. Controlastic is produced by depositing a film of latex on an endless belt which is conducted through a drying chamber. As the continuous rubber tape formed upon drying of the latex leaves the belt, it is stretched and, while still under tension, is rolled upon itself to form a tubular covering around the fibrous yarn which is supplied from a spool and is guided into one edge of the rubber tape as it is rolled upon itself. The tape is rolled in such a way that the edges remain parallel to the completed structure, the number of convolutions being determined by the width of the tape. The extent to which the composite thread will elongate is determined by the core

*INTO SUCH USES as bathing suits and foundation garments goes a large part of the industry's elastic yarn product. Conformity and support are the characteristics lent by this material.*

of fibrous yarn. Controlastic is now available in sizes ranging from 20 to 40 gage, but finer gages up to 14,000 yd. per lb. are now being perfected. Manufacture of Controlastic is covered by U. S. Patent No. 2,054,354.

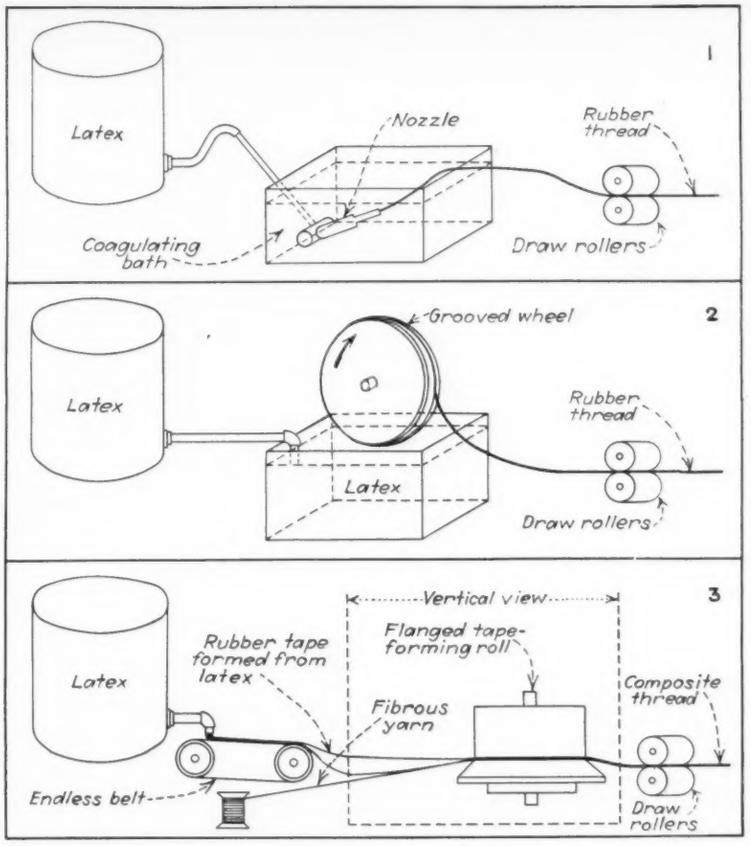
### Marketing the New Yarns

After 18 months of tested use in a wide range of garments Controlastic was offered to the trade for the first time in June, 1936. This yarn is manufactured by Andrews-Alderfer Co., Akron, O., and is distributed through Percy A. Legge, Inc., New York. It won quick acceptance in the manufacture of knitted fabrics for the corset industry; while the subsequent nine months have opened various other markets to the yarn, this field remains the chief outlet. Knitted fabrics containing Controlastic are used extensively as corset paneling, its popularity in that market being ascribed to the fact that it is highly resistant to needle-cutting, thus helping to solve a problem which has been long a vexing issue in knitted corset fabric usage. This resistance to needle-cutting also has helped build sales for the yarn among manufacturers of hose supporters. Other markets to which the yarn is selling in increasing quantities are knitted underwear and outerwear. New uses now in process of development include tapes, braids and woven materials. Controlastic yarn is sold to fabric manufacturers in the rubber state. About 40% of these manufacturers do their own covering of the yarn. Other companies buy the rubber yarn, cover it, and sell it with the textile covering to fabric manufacturers. Cotton yarn is most popularly used for this covering.

Filatex Corp., an affiliate of Sylvania Industrial Corp., first offered Filatex yarn commercially last year after several years of experimental activity. The company opened offices in New York and now has completed a sales organization covering all the textile areas of the country. Filatex yarn is used in both knit and woven fabrics, probably more in the former than in the latter. Among the garment lines in which the yarn is employed are hosiery, bathing-suits, and a varied range of underwear lines, including brassieres.

Especial interest attaches to the merchandising story behind the two new yarns as that offers an index to the direction which their sales growth may be expected to take. As will be seen in the following, they have distinctly separate characteristics and advantages, opening to each a wide range of market possibilities.

The merchandising story of Controlastic yarn is focused mainly on the fact already mentioned that it gives the fabric increased resistance to needle-cutting. This resistance is attributed to three characteristics in the yarn: first, its acetate core; second, its laminated construction; and third, the fact that the grain runs parallel to the thread. In sales promotion, distributors of Controlastic yarn emphasize that it increases resistance to, rather than eliminates, needle-cutting. Claims of 100% elimination had been made by certain knitters of Controlastic fabrics, but these are strongly discouraged by the distributors, in favor of the more modified sales approach. In explanation of this policy it is pointed out that the elimination claim may not be literally accurate as a manufacturer not fully familiar with use of the yarn might make a fabric which would not eliminate needle-cutting.




**1.** ***EXTRUSION METHOD for producing rubber thread from latex, showing nozzle submerged in coagulating bath, from which thread is drawn somewhat in the manner of rayon production.***

**2.** ***PICK-UP METHOD for producing rubber thread from latex, showing heated wheel with fine groove at periphery, to which latex adheres and which delivers a coagulated thread in the course of a revolution.***

**3.** ***ROLLING METHOD for producing rubber thread with core of textile yarn, showing narrow ribbon of coagulated latex being rolled around a textile yarn by a special forming wheel.***

### Merchandising Policies

The chief advantages of Filatex yarn, as emphasized in the company's sales promotion are its enduring elasticity and resistance to ageing. The manufacturers of the yarn assert tests have shown that it will last longer than any other on the market. Because of this, and other attributes, they believe the yarn will establish for itself a permanent and significant place in the field of elastic textiles. Filatex Corp. holds the view that the trend in textile use of elastic yarn is definitely toward two-way stretch and toward even finer sizes. The company announced April 2 that it had acquired a plant in Trenton, N. J. for the manufacture of its products.

On the theory that the consumer of the future will demand longer life in elastic textile merchandise, the sales effort will accent the importance of longevity of elasticity. It is contended that since merchandise sometimes stands long on the store shelf it must contain yarn which will not lose its stretch or snapback. As one Filatex executive put it "every additional half year you add to the life of the yarn makes it so much more of a staple commodity."

## *Knitting mills*

# Light Up


***By Roy A. Palmer***

*Illuminating engineer,*
*Duke Power Co.,*
*Charlotte, N. C.*

***Above: Combination incandescent and high-intensity mercury-vapor lighting system at Vance Knitting Co., Kernersville, N. C. Seamless-hosiery machines, knitting undyed rayon and silk yarn, are placed with working aisles on 9-ft. centers. Some 67 open-type combination reflectors, having in each a single 400-watt high-intensity mercury-vapor lamp and three 100-watt incandescent lamps, are spaced on 20-ft. centers down the work aisle. Staggered between these units in the adjoining work aisles 9 ft. away is a another row of similar units. All units are mounted 11 ft. from the floor. In the looping department, similar units are spaced on 12-ft. centers in the aisles, with 8 ft. between the rows. System provides from 40 to 45 foot-candles on the machines.***

***Above: Knitting department in windowless plant of Hudson Silk Hosiery Co., Charlotte, N. C., described in October, 1936, issue of TEXTILE WORLD. Direct incandescent lighting is in use, with 90 300-watt Holophane prismatic reflectors arranged in the working alleys throughout the plant spaced 9 ft. apart. There are 18 rows with 5 units to the row, providing 20 to 30 foot-candles.***

***Below: Plant of Chipman La Crosse Hosiery Mills Co., Hendersonville, N. C., is particularly well adapted to indirect lighting as the ceiling is flat-white and smooth. Thus, maximum amount of light is reflected down on the work, with minimum shadows and low brightness. Installation consists of 120 indirect lighting fixtures spaced 12 ft. apart, and mounted 9 ft. 6 in. from the floor. Each unit is equipped with a 500-watt inside-frosted lamp, which provides a level of illumination of 25 foot-candles.***

OUTDOOR illumination on a sunny, summer day may measure as much as 10,000 foot-candles; on a cloudy day it may be 1,000 foot-candles. Yet a recent survey of 2,500 industrial plants showed that the average illumination was less than 3 foot-candles. However, there are many textile plants in which the illumination is on the order of 25 to 50 foot-candles. Continual reductions in electric rates, lower prices of lamps, and improvements in efficiency of lamps have made the cost of light today lower than ever before in history; and higher levels of illumination are, therefore, economically possible.

Among the steps forward toward better lighting was the development of the high-intensity mercury-vapor lamp. This type produces about twice as much light per unit of current consumed as does a tungsten-filament lamp. Disadvantages are that it fails to start immediately when the current is cut off and on again, and each lamp must be operated in conjunction with a transformer or reactor. However, when tungsten-filament lamps are used in combination with the mercury lamp, the delay in starting is not serious. Furthermore, the tungsten-filament lamp produces light with an excess of red and yellow rays as compared with daylight; and, as the mercury light lacks red, the combination of these two sources produces a pleasing, white light.

Another recent development which has had an effect on mill lighting is the trend toward the erection of windowless buildings. Several windowless mills are already in operation, and others are now under construction. Advantages of such plants with reference to lighting are: (1) elimination of variation in intensity of lighting in proportion to distance from window, (2) elimination of variation of intensity of lighting as daylight fades, and (3) elimination of glare and heat losses through window glass.

There is a growing appreciation among textile executives of the benefits realized from better lighting, and many plants have installed up-to-date lighting systems. In knitting mills there are three outstanding types of modern lighting, each of which has a special purpose or application. They are: (1) combination incandescent and high-intensity mercury-vapor, (2) direct incandescent, and (3) indirect incandescent. These three types are shown in the illustrations on this page.

# Notes on Processing Knit Goods

## *Pages from a dyer's notebook*

By E. S. Dunlap, Ch. E.
*Dyer, Belle Knitting Corp.*

### *Dyeing Acetates*

FABRICS MADE from acetate yarn still give the knit-goods dyer more trouble than does any other type of material. Since acetate fabrics have a tendency to float, it is advisable to add only a minimum of soap to the dyebath. Again, even with good wetting out, the dyeing operation should not be rushed. Best results as regards uniformity of shade are obtained when the pieces are of a uniform length. It is advisable to limit acetate lots to not more than 25 pieces, unless the shade to be produced is one which is known to be very level dyeing. With a tub of too great a length, it is difficult to avoid different shades in different portions of the dye beck.

### *One-Bath Method*

IN PROCESSING some types of rayon knit goods, the one-bath method of scouring, bleaching and dyeing gives excellent results. Some dyers use sodium perborate; others use sodium peroxide with equal success. In either case, it is essential to use dyes which stand up when employed with the bleaching agent. For fabrics which contain little or no mineral oil, the following formula will usually prove satisfactory for a load of 24 strings: 9 lb. sodium perborate, 20 lb. scouring oil, and 8 lb. soda ash. Equivalent amounts of peroxide and soap can be substituted for the perborate and scouring oil. Enter the goods in the dye beck, add the soap or scouring oil and alkali, raise the temperature to 130° F., run 15 min., add the dye which has previously been dissolved and strained, bring temperature to 180° F. or higher if necessary, run for 1 hr., sample for shade, make additions if necessary. After the correct shade has been obtained, a warm soap rinse is advisable.

### *Two-Bath Method*

WHENEVER the one-bath method can be employed, the cost for steam, labor, etc., is materially reduced. However, if large quantities of mineral oil have been employed in coning the rayon, the two-bath method usually will give better results. Consistent shades will not be produced unless the same bottom is obtained on every batch. Careful supervision of the scouring and bleaching is even more important than the dyeing operation itself.

### *Rayon-Acetate Mixtures*

DYEING of rayon-acetate mixtures, leaving the acetate white, accounts for a good percentage of our present-day production. Use of dyes which will not stain the acetate during the dyeing operation, and which will not creep onto the rayon in the interim between dyeing and drying, is essential. There are several chemicals on the market which lessen the danger of creeping, and it is advantageous to add one of these to the last bath in which the goods are treated before they are removed from the dye tub. These fabrics can be processed by the one-bath method similar to the one used for all-rayon fabrics; but the perborate should be omitted.

### *Knitted Lace Fabrics*

AT PRESENT many mills are producing knitted lace fabrics, using cotton yarns. These fabrics are usually dyed by a one-bath method, as too much handling produces damages, the knitting being of a loop construction. Actual dyeing of these fabrics should not cause much trouble; but the finishing must be done with great care. It is also imperative that there be as little rewashing as possible, as this, of course, damages the fabric.

When bleaching is unnecesary, the following one-bath procedure can be employed: Load the lace on the machine, using a wetting-out agent in the bath so that there will be no tangling of the fabric while loading; add 1% soda ash, ½% sulphonated fatty alcohol; and the necessary dye; run for about 10 min. at 120° F.; bring the bath to the boil and boil for about 45 min. to insure level dyeing; and sample for shade. If bleaching is necessary, 1% of sodium peroxide can be added, providing dyes are used which will withstand an alkaline bath. Dye goods inside out, so that the loops cannot pull out by friction of fabric against the dye-tub.

Quite a bit of controversy has been waged relative to where the blame should be placed for drop-stitches present in loop-constructed fabrics when seen in the finished piece; however it is generally conceded that this is a knitting problem. It has been found that some designs are impractical to process, due to their ease in forming drop-stitches. Regardless of who is to blame for drop-stitches, it remains that the dyer must handle these fabrics with the greatest care and the quickest procedure within his power.

*Control of pH and time vital in*

# Hosiery Boil-Off

By William T. Leggis

THE boil-off operation is not only the first step in processing silk hosiery, but it is also the most important, since the ultimate results obtained in dyeing and finishing are dependent on the boil-off. Although the subject has been much discussed, there still is no general agreement regarding the methods and materials which are most suitable for boiling-off silk hosiery. It is possible, however, to lay down some rules as to just what the ideal boil-off should accomplish and to state certain of the conditions under which the operation should be carried out.

First, the boil-off must thoroughly degum the silk portions of the stocking uniformly and in the shortest possible time. Second, it must accomplish its work at a pH which will not be deleterious to the silk fibers. Third, it must keep all the sericin, and the oils, soaps, and fats used in the throwing of the raw silk thoroughly emulsified and dispersed. Fourth, it must accomplish its work with the least possible mechanical agitation. Fifth, it must thoroughly scour and clean all the cotton portions of the stocking, such as the welts of service-weight styles, and the cotton reinforcements of the cotton plated with silk heels, soles, and toes.

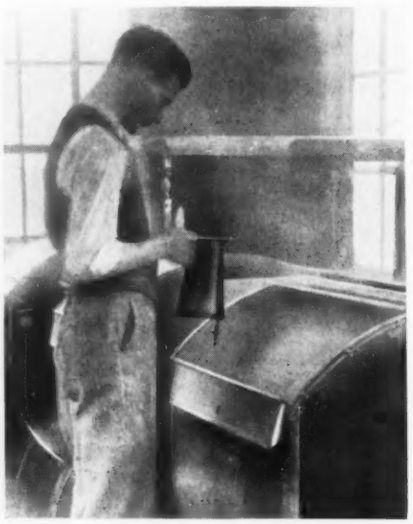
Each mill has its own peculiar problems, depending upon the type of equipment available, the condition of the water supply, the type of hosiery to be processed, and the method of dyeing—whether by the one- or the two-bath process. This accounts, in part at least, for the fact that some dyers prefer to use soap for degumming silk hosiery, while others prefer one or another of the prepared boil-off oils.

### Degumming With Soap

If good, soft water is available, the soap boil-off will give excellent results, leaving the silk in a desirable, soft condition. However, if the water supply is hard, spotting troubles due to the precipitation of lime soaps will give serious trouble, unless proper precautions are taken to incorporate in the boil-off bath materials which will keep the lime soaps in suspension during the boiling-off, and particularly in the rinses. Such materials as the sulphonated fatty alcohols and sodium metaphosphate in dilute concentrations will accomplish this.

The soap boil-off time varies from ½ to ¾ hr., depending upon the type of goods being processed. Silks vary so in nature that a fixed boil-off time cannot be relied upon. Therefore, samples should be taken after ½ hr. and every 5 min. thereafter, and tested for the degree of boil-off. This test should be carried out by an experienced person, who can tell from the feel of the dried sample whether the boil-off is complete.

Particular attention should be paid to such portions of the stocking as are



heavily reinforced with either silk or cotton. Usually these portions of the stocking are more compactly knitted and take a longer time to be degummed than does the main portion of the stocking. When properly degummed, all portions of the dried sample should be elastic. If any parts of the stocking—such as the heel, sole, or toe—have a boardy feel, this is an indication of incomplete degumming.

A straight, high-grade, olive-oil soap will yield a boil-off which will begin at pH 9.2 to 9.5 and drop quite rapidly to a pH of approximately 8.5. This indicates that the boil-off efficiency of a soap bath decreases as the degumming proceeds. On the other hand, addition of 1 or 2% of a suitable alkali will act as a booster and keep the pH at a point where efficient degumming will continue during the entire boil-off period.

There is still much prejudice against the use of alkalis for boiling-off silk hosiery. However, those mills which have had the courage to experiment with these materials have experienced good results, with a substantial decrease in costs for boil-off material and a saving of at least one-third in the time required for degumming. Tests and trials have shown that where a 10 to 12% flake soap boil-off was being used (based on the weight of the goods), necessitating a 45-min. treatment, 5 to 6% of soap plus 2 to 3% of a modified sodium carbonate or sodium sesquicarbonate, will accomplish the same result in from 20 to 30 min., with an approximate saving of 40% in material costs.

If an alkali-adjusted boil-off is used, samples of the hosiery should be taken for testing after 20 min. and every 5 min. thereafter.

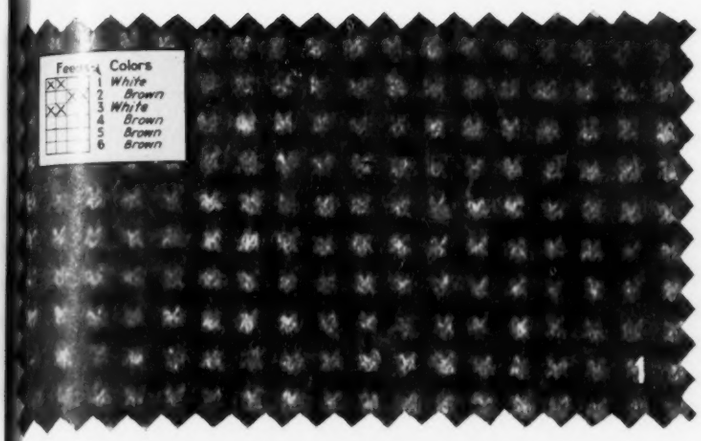
### Boil-Off Oils

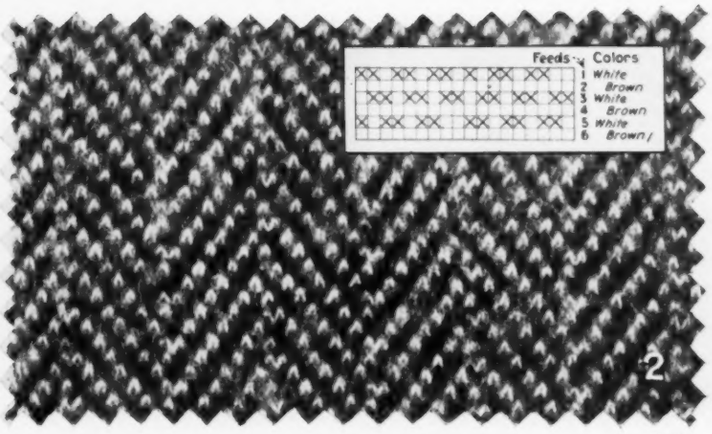
One type of boil-off oil consists essentially of sulphonated castor or olive oil plus a modified sodium carbonate. A typical formula is 5 to 7% sulphonated oil (60% fat content) and 2½ to 4% of a combination of sodium carbonate and sodium bicarbonate. This will give an initial pH of approximately pH 10.5. Treatment of the hosiery for 20 min. at the boil is usually sufficient to give complete degumming with this type of boil-off oil.

It has been found that silk hosiery can be successfully and safely boiled-off with compounds which have an initial pH of approximately 10.2 to 10.5 and which drop during the course of the boil-off to approximately pH 9.5. Numerous prepared boil-off oils are available, which are alkali adjusted to a pH satisfactory for proper degumming. Since these rinse easily from the hosiery and are convenient to use, they are favored by many dyers.

When alkali-adjusted boil-off oils are employed, samples should be taken for testing after 20-min. and thereafter at 5-min. intervals.

Regardless of the type of degumming agent, time is an important factor in boiling-off. Silk hosiery is too valuable a product to gamble with, and the operator's memory should never be relied upon as a means for timing boil-offs. The machine should be equipped with adequate facilities for controlling the time. At the very least, it should have fixed to it a clock face with indicating hour and minute hands.






# Knitted Overcoating

## *Better raw stock and improved finishing aid popularity*

By William W. Rumford

KNITTED overcoatings are not new on the market, but they have lately shown a new lease on life. There are, naturally, several substantial reasons for their present ready acceptance by consumers and their increasing marketability in the trade.

For many years heavy-weight, medium-weight, and light-weight coatings have been knitted, finished, and sold successfully by a few mills. The few mills which have stuck to their guns over a long period have, in reality, been pioneering a product in which they had absolute faith as to its qualities and merits—a faith now justified.

Due to the various processes involved in yarn preparation, knitting, and finishing, these mills found it necessary diligently to study and overcome the obstacles arising in each separate process. Added to the manufacturing problems were the competition with cloths fabricated by more established methods and the seemingly ever-present belief of the majority of consumers that, if it were knitted material, there must be something inferior about it.

Perhaps the assumption that the cloth is inferior has been justified in some instances. However, the origin of this widespread belief probably lay in psychology—in the reasoning that, since the fabric could be processed at less cost, it could not be so good as cloth made by other means.

Today the experimenting is behind and a quite different aspect is being placed on the knitted overcoating. The quality of finish, the lack of undue stretchiness, and the practicability of the cloth to the wearer are features being given fair consideration. The quality of the product appeals to the buyer; the economy of knitting, to the manufacturer.

### Two Important Factors

The actual knitting of the yarns into a fabric does not hold the importance of two other steps in the manufacturing process—(1) the selection of the proper raw stock for the yarn and (2) the control of the finishing processes after knitting. The same knitting machines may be used with identical set-ups by different mills and an excellent job done in the knitting; yet, through variations of the yarn stock or different procedures in the finishing, varying grades of quality may result. A better present-day knowledge of these two important angles is, in general, the reason for the high quality of overcoatings now being produced.

In making a cotton-back overcoating, it is possible to produce on the knitting machine a clean cotton side showing no wool and to have all of the wool on the reverse side. This is known as double plush or double fleece, the terms being derived from the fact that two separate ends of cotton are fed into the machine for one side of the cloth and the wool, by being fed in between the needles, constitutes the plush or fleece side when finished. The weight of the finished piece can be controlled almost entirely by the wool-fleece yarn. The latter yarn, since it does not enter the beards of the needles, can be varied considerably on any one gage of machine.

When an all-wool overcoating is made, a single-plush or single-fleece set-up is used in the knitting. In this case a

wool yarn replaces one of the cotton yarns of the double-plush arrangement and the other cotton yarn is left out.

### Popular Weights

Popular are the 32-oz. and 26-oz. weights for 54- to 56-in. widths of the cotton-back fleece coats, and 22-oz. (called "California weight") is the medium-weight coat. For topcoating, 16-oz. is practically a standard weight and is made on a finer gage, usually with a tuck stitch or fancy pattern.

Production is high from a knitting machine, and a press-off is taken care of by stitching the cloth back on the needles so that no welt or imperfection shows.

The accompanying illustrations will serve to show the variety in types of design and fabric. Following are detailed descriptions:

### Five Examples

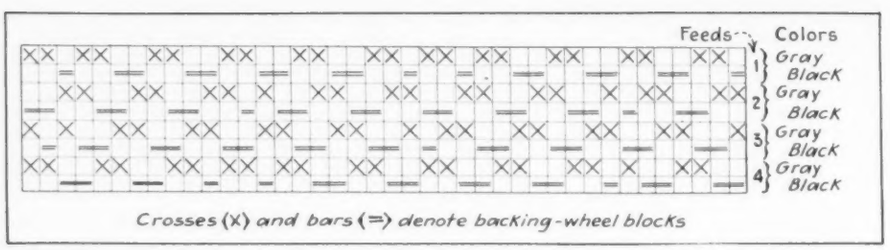
1 is a checked topcoating cloth weighing 16 oz. and made on a 16-gage spring-needle machine. There are six feeds, the first three of which are 2-and-2 cut-presser feeds. The other three are plain. Needles in the cylinder must be exactly divisible by 4.

2 is an 18-needle herringbone-pattern topcoating made on 16-gage with six feeds. The first, third, and fifth are cut-presser feeds, while the remaining are plain. The two colors are arranged alternately. Needles in the cylinder must be exactly divisible by 18. The jack or cut pressers must also divide evenly by 18. Many widths of herringbones are used, and this illustration offers only one of many possible examples.

3 is a typical women's-wear fabric in a diagonal pattern. This also is made with six feeds, three of which are plain, with the other three knit-1 and tuck-2 cut-presser, according to the layout. The needles must be evenly divisible by 3. In finishing, this particular fabric is not fulled quite so much as the men's topcoating and therefore has a slightly softer feel.

4 is a finished cloth that shows no pattern. This is a 14-gage, 32-oz. men's coating with a wool fleece on the face and a cotton back. The cotton back is composed of two ends, one a binder yarn and the other a face yarn. (While the side referred to is used for the wrong or back side of the garment, it is of course technically the face of the cloth). The woolen face comprises a suitable size of yarn run into the needles by means of a backing or plush wheel blocked three out and one in. A dark-brown mix is used in this case on all feeds, as the fabric is a plain color. The term "suitable size of yarn" is used here, as this backing yarn can be varied considerably in size to give the desired weight of finished cloth. With four feeds the needles in the cylinder should divide evenly by four and the backing wheels should do the same.

5 is a 32-oz. men's overcoating with a herringbone pattern showing on the fleece side. It is a double-plush fabric with cotton back. The side showing the pattern is all wool and is made with *two* backing wheels per feed. The layout of the backing wheels is as sketched, and the pattern is 40 needles wide. Cylinder needles must be exactly divisible by 40, and on 14-gage the backing wheels should have 40 cuts.

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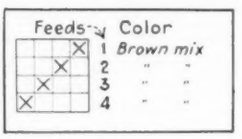


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ADVERTISING PAGES REMOVED

# The Overseer's Corner

## Concerning Ambition

"I ran into our old friend Joe Fade the other day," Pete remarked to Bill, "and he told me that he is now an overseer at the Tamp Mills. I never worked in the same plant with Joe, but he must be a fine overseer; I don't think I ever saw anyone with more ambition."

"And is a lot of ambition such a good thing?" asked Bill so softly that he seemed to be talking to himself.

"What is that nonsense you are mumbling?" Pete snorted. "If you try telling me that a person shouldn't be ambitious, I'll hustle you right over to see your doctor."

"I didn't say that a person shouldn't have any ambition." Bill rejoined. "I merely said that there is such a thing as an overseer having too much ambition."

"I suppose," said Pete, "you think that an overseer should be perfectly contented with his job and never even hope for anything better."

"Not at all," Bill explained, "but if he has too much ambition he'll be dissatisfied if he isn't president of the concern two days after he joins the outfit. Take Joe Fade as a typical example. He just runs over with ambition and about all he thinks of is getting ahead in this world, but you know yourself how many different jobs he has had. Time after time he has suddenly decided that there was no chance for him to get ahead in a particular mill or that the superintendent was jealous and double-crossing him. When you think all the time about what's ahead of you, you are liable to neglect the present. An overseer should have ambition, of course, but he should keep it within reasonable bounds and remember that patience is also a virtue. We can't all be superintendents."

"I never heard such talk!" Pete came back. "Give me a man who has a driving desire to get ahead. Ambition is a fine thing and no one can have too much of it."

• ***Do you think that an overseer can be too ambitious?***

### *Posts Percentage Efficiency of Piece Workers*

*Editor, Overseers' Corner:*

I do not think that the wages of individuals should be posted each week in the department, but I do think that the percentage of efficiency of each piece worker should be posted. We are doing this in our plant and have made a gain of 12% per week in efficiency.

As a base we took a salary that we were pretty sure no one could reach in piece work, and we figure the individual paycheck against this base. We place the operator's name on the bulletin board and the percentage opposite. At first our percentages ran from 54 to 80% of the base. Operators who were as low as 54% began to pick up at once, while those at 80% seemed to be content until the low ones began to come up. Those who were apparently at a standstill at 80% have now gone as high as 91% and we are expecting them to go higher.

The overseers and their assistants are just as eager to see the list each week as the operators. We know that the operators who are lowest are putting forth every effort to remove their names from the bottom of the list, and by so doing they give the overseers more time to look after those working by the hour.

P. E.

### *Honor Skill!*

*Editor, Overseers' Corner:*

In regard to posting individual wages, it would seem that this method would defeat its own purpose, namely, to inspire the worker to greater effort. I think that it would breed dissatisfaction. Human nature is the same the world over and the subject of partiality would be brought up.

If the idea is to create an honor roll, why not post the names only in the proper order, leaving out the dollars and cents? Make it a matter of workmanship and skill—not finance.

James R. Wray.

### *Posts Only Piece Work Pay*

*Editor, Overseers' Corner:*

I read with interest the discussion of Pete and Bill in regard to publicity for pay envelopes. It is doubtful, in my opinion, whether this plan will work when applied to employees paid by the hour, because sometimes extenuating circumstances make it advisable to pay different rates on similar work. In our department, we do, however, post all wages paid by the piece. This saves the timekeeper from being hindered by pieceworkers wanting to know what they made the day before.

L. P.

### *Likes Wage-Posting Idea*

*Editor, Overseers' Corner:*

With respect to the article "Publicity for Pay Envelopes," on first reading I concluded that Pete was all wet, but after thinking the matter over I have come to the conclusion that it is a practical idea and will benefit both company and employee.

As Pete says, if you look at a list and see that you are earning less than someone else in the same line of work, you

**CONTRIBUTIONS** ***to "The Overseers' Corner" are paid for without regard to length. We will use letters discussing the narrative on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute kinks or practical helps will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. If these pages interest you—contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York, N. Y.***

will begin to investigate and may find that the fault is entirely with you and that you may be able to correct it.

On the other hand, it will prove to the employees that the policy of the company is open and above board, that there is nothing to hide, and that there is no discrimination against anyone. The plan is at least worthy of a trial.

M. M.

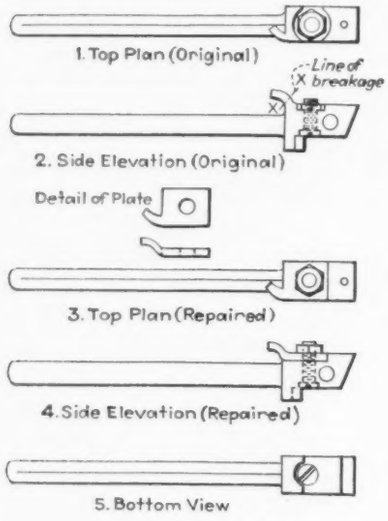
• • •

# Overseers' Practical Helps

## Repairing Shuttle Spindles

In running shuttles using the flat-type quill, we had some trouble with the lug breaking off at the point shown in Fig. 2. Rather than throw these spindles away, we applied a plate as shown in Figs. 3 and 4.

The method is to file the spindle and




fit the plate. The latter is held in place by the nut on the adjusting screw.

C. H. CALLAHAN.

## Lubrication Pointers

The March issue of *Lubrication*, a monthly publication of the Texas Co., 135 East 42nd Street, New York, was devoted to recommendations on the lubrication of spinning and twisting frames and looms. From that issue we have culled the following pointers:

The primary function of the spindle oil is as a shock-absorbing assistant, even though lubrication is most essential. Unless a suitable glaze is developed on the surface of cast-iron bolsters shortly after the spindle assembly is put in operation, vibration cannot be effectively prevented. The oil must be highly resistant to break-down or oxidation; otherwise sludge may be developed in interfere with the cushioning or dampening.

### Temperature a Guide

The temperature of spindles is now accepted as a primary indication of the lubricating and friction-reducing ability of a spindle oil. With a high-grade oil, the temperature of the spindle may range from 7 to 15° above that of the surrounding atmosphere. The higher the viscosity of the oil, the greater will be the internal friction, or resistance to shear, between the oil molecules, with the result that more power will be required to drive the spindles. Reduction in viscosity should never be carried to an extreme, however, due to impairment of oil-film strength and the possibility of subsequent metal-to-metal contact.

The mill operator must assume the responsibility of keeping spindle oils clean. They can be kept free from external contamination by storage in clean tanks, free from dust and dirt, and handling only in clean containers when relubricating. Contact with yarn is doubly objectionable if the oil is dirty or of poor quality. It is always advisable to use a mineral oil as light in color as is available, since color is a visual indication of the degree of refinement. Maintenance of a cleanly condition can be subsequently assured by flushing spindle reservoirs at regular intervals and refilling with fresh oil. Study of many tests has proved that routine cleaning is beneficial in reducing power consumption, it having been observed that the latter will usually vary directly with the degree of cleanliness of the spindle base.

### Throwing Machinery

In the case of silk and rayon throwing machinery, the oil level in the spindle bases is particularly important. Inasmuch as they form the oil reservoirs, they should never be more than half full of oil; otherwise the oil may work upward to drip or be thrown onto the yarn of adjacent spindles. This possibility has led many throwsters to prefer the self-oiling type of spindle. Re-oiling of spindles can be most accurately controlled by removing them and carefully filling the reservoirs with oil to the desired level. No oil should be allowed to remain on the outside of the spindle mechanism or to come in contact with the driving tape. Many authorities feel that better control is made possible by renewing spindle oil in sequence, and not servicing all units at approximately the same time.

Worsted cap spindles are designed to eliminate the oil reservoir, provision being made for mechanical oiling by means of oil-soaked felt located in the rail, which lubricates the tube by wiping action. The oil supply on the felt is renewed twice a day; this must be regularly attended to, or heating and seizing may result.

On the mule the spindle bases are open and the possible development of oil throwing will frequently render it advisable to use a somewhat heavier spindle oil.

Frictional spindle drives should always run perfectly dry, as slippage will be bound to occur if they become at all oily. Adjacent gearing and exposed silent-chain drives should be sparingly lubricated by means of a relatively heavy grade of liquid grease that will not drip. Where ball bearings are installed for the cylinder, the lubricant should be a light-bodied grease free from acid and alkali and capable of functioning with minimum torque and power consumption. Roller bearings of the flexible type, however, can generally be best served with a medium to heavy oil.

### Oil on Belts

Belts should also be kept absolutely free of oil and grease; otherwise slippage and deterioration will be bound to occur. If they should become oily, the free oil can usually be absorbed by holding chalk or whitening against the moving belt. The surface should then be carefully scraped with a dull knife to remove all such foreign materials which might interfere with transmission of power.

Traveler rings must function with the least possible rise in frictional temperature in any type of spinning or twisting operation. Lubrication with a light-consistency, comparatively stainless grease is conducive to such operation. These rings are an important part of such equipment and frequently may give rise to trouble due to the excess heat generated by virtue of the work they do. Their lubrication is best accomplished by putting the grease in the palm of the hand and applying it to the rings with a finger or using a flexible swab. The operator should be careful to avoid excessive lubrication of such rings, due to the possibility of yarn or thread stains when dirt or grit has accumulated on the inner surfaces. This has actuated study of a self-lubricating type of

ring employing the principle of wick feed.

Loom operators must learn to realize that they are dealing largely with exposed mechanisms, that too much lubricant may cause "oil spots" on the warp due to throwing, and that less lubricant more frequently and uniformly applied is far better than a lot applied less frequently. This should mean discarding of the grease paddle in favor of a brush, the use of more automatic lubricant fittings, and consideration of the fact that the operators themselves are quite as important to effective lubrication as the lubricants they may be using.

## Equivalent Atmospheric Conditions

This table, although issued to members of Committee D-13, the textile committee of the American Society for Testing Materials, at its recent meeting in Providence, R. I., is not recommended for standardization, but is offered for the information of laboratories not equipped to prevent rises in room temperature. Thus, if a cotton laboratory, for example, finds its temperature risen to 80° F., it will see that its humidity must be maintained at 66% to provide the same amount of moisture in the material that would be provided by standard atmospheric conditions—that is, 70° F. and 65% relative humidity.

1. EQUIVALENT REGAIN CONDITIONS FOR COTTON (Hartshorne, Foster)

| Dry-Bulb Temperature °F | Relative Humidity % |
|---|---|
| 70 | 65 |
| 80 | 66 |
| 90 | 67 |

2. EQUIVALENT REGAIN CONDITIONS FOR WOOL (Hartshorne, Schloesing); SILK (Schloesing, Schmutz)

| Dry-Bulb Temperature °F | Relative Humidity % |
|---|---|
| 70 | 65 |
| 80 | 67 |
| 90 | 69 |

3. APPROXIMATE REGAINS OF VARIOUS TEXTILES (In Per Cent of Dry Weight) Acquired by adsorption to equilibrium in standard atmosphere, 65%, 70° F.

| *Material* | *Description* | *Regain %* |
|---|---|---|
| Asbestos | pure | 1.0 — 2.5 |
| Cotton | loose | 8.5 |
| | yarns | 7.0 — 8.0 |
| | fabrics | 6.5 — 8.5 |
| | mercerized | 8.5 — 9.2 |
| Jute | yarns | 10.0 — 14.0 |
| Linen | yarns | 8.0 — 9.0 |
| Rayon | acetate yarns | 6.0 — 6.5 |
| | regenerated yarns | 11.0 — 14.0 |
| Silk | yarns | 10.0 — 11.0 |
| (boiled off) | fabrics | 9.5 — 10.5 |
| Sisal (unoiled) | twine | 10.5 |
| Woolen & Worsted | yarns | 13.0 — 16.0 |
| | fabrics | 12.0 — 15.0 |

## The Overseer's Corner

# Shuttle Marks and Shiners

### Should be checked by careful settings

By J. S. Stevens

EACH loom weaving rayon is an individual problem; and it does not follow that, because difficulties are overcome on a number of looms by a certain method of setting, equivalent results can be obtained on all looms in the same way. In some cases standard settings must be departed from to an extreme degree. Nevertheless, certain general rules and suggestions are useful in combating defects.

Shuttle marks, which are more prevalent on wide looms of 56 in. or more, are caused by the shuttle striking the warp ends at various places along the full length of the shed. The blow from the shuttle damages the filaments, and the broken fibers have a dulling effect. On whatever kind of rayon shuttle marks are made, the finished fabric will reveal them in no uncertain fashion.

Attention first should be directed to the shuttle. A perfectly smooth and polished surface is essential. Badly worn shuttles should be discarded, especially if the groove is worn away from the base of the shuttle. The object of tapering the shoulders, both back and front, is to minimize the tendency of the shuttle to strike the warp along the smaller part of the shed.

The race-plate felt should be held taut by tacking down in the slots at each end of the lay only, and should not be tacked or glued on the surface of the race plate.

A loose picker or a nut loose on the heel bolt in the shoe are common causes for shuttle marking. If the hole in the picker is particularly deep, this may cause the shuttle to be thrown with a slightly upward movement as it leaves the box, and in descending to its normal level the shuttle strikes the warp and leaves its mark. The shuttle-box front binder should not be set in too close, as this causes the shuttle to ricochet from the reed and strike the warp in the smaller part of the shed.

The picker stick should be straight and in the center of the sweep slot. It is important that the picker be neither too high nor too low, and its proper position should be determined for the full sweep. If the rocker foot or shoe is badly worn, this will cause an irregular height of the picker and result in an erratic throw of the shuttle.

Correct alignment of the reed with the shuttle-box back is essential, and care should be taken also that the bottoms of the boxes are leveled up on the same plane as the race plate; otherwise there will be a tendency for excessive shuttle marking of the warp and danger of the shuttle flying out.

### Setting or Temples

The use of temples and the height at which the yarn is held above the race plate must be determined by the class of goods being woven. Warps light in construction necessitate the use of temples to overcome fraying of the warp ends at the selvages. Even with the correct setting of the temple, which is at a sufficient height to clear the race-plate felt with the lay on front center, the warp ends are raised at this point in proportion to the lower thickness of the temple used, which varies from $\frac{3}{16}$ to $\frac{3}{8}$ in. If the shed clearance is held to a minimum between temples, the shuttle is raised as it enters the shed and the danger of shuttle marking exists, since the shuttle strikes the warp at a lower level. It is advisable, therefore, to maintain the shed clearance throughout at an approximate height as determined by the lower thickness of the temple used, because, if there is no cause for an erratic flight of the shuttle, the raised shed in a warp of light construction will carry the shuttle evenly.

Avoidance of shuttle marking in warps of heavy construction is rather more difficult. Whereas with warps light in construction shuttle marks are usually the result of the erratic flight of the shuttle forcing the warp ends to bear down on the race plate, the greatly increased number of ends in the more heavily constructed warp forms a carrying surface for the flight of the shuttle

***EVEN WHEN the greatest care is taken in the changing over of cotton automatic looms to the weaving of rayon, as recommended by Mr. Stevens in the Feb. 14 issue, the weave room, after production is started, must be constantly on the alert for imperfections in the fabric. What these imperfections are likely to be and how they can best be avoided are explained in this article.***

and each blow from the shuttle leaves its mark without forcing the yarn to the race plate. Because of this important factor, a true flight of the shuttle becomes all important. To facilitate this, the harnesses should be dropped as low as possible, so that the open shed is held to a minimum clearance of the race plate. It is recommended in all cases, wherever possible, that the use of temples be dispensed with (except for the thread-cutting section), because, as previously mentioned, shed clearance cannot be held down to a minimum throughout and a true flight of the shuttle is therefore impossible.

Because of the minimum amount of shed clearance from the race plate, which should not be more than $\frac{1}{16}$ in., it is advisable to use a race-plate felt the same width as the shuttle and to taper off the remaining part of the race-plate board so that ample clearance will be afforded the warp ends in the forward and backward movement of the lay.

The danger of uneven weaving is lessened considerably in cloths which possess a high number of picks per inch, so that the shedding may be set earlier than with cloths light in construction. A recommended setting is to have the reed a distance of $1\frac{1}{2}$ in. from the fell of the cloth with the harnesses level. Unless the loom is weaving its full-width capacity, this setting will permit an almost open shed as the shuttle enters; and the danger of a high shed causing the shuttle to rise as it enters is obviated.

The necessary sweep of the picker stick should be governed by the amount of power required to box the shuttle properly on each successive pick. In this case something approaching regulation sweep is recommended, so that the lug strap may be held high as possible.

Should great difficulty be experienced in getting rid of shuttle markings, a steel bar positioned under the cloth between the fell of the cloth and the breast beam will help to solve the problem. The bar may be held stationary, raising the normal line of the cloth at this point by $\frac{5}{16}$ in. If the rod is made to oscillate with the slackness of the cloth on the beat-up of the filling, its rising movement should be limited to this measurement.

### Shiners

A shiner is best described as a variation in tension on the filling as it is being interlaced which causes the pick to shine conspicuously above the rest. Scientifically it is variation in the value of reflected light. Several factors may be responsible for this defect, the most important of which is incorrect tension being afforded to the filling as it leaves the eye of the shuttle. With shuttle-changing looms, uniform tension in all shuttles is essential. A variation in tension means that a taut pick as well as a loose pick may result in a shiner. Very often a full-width shiner is made when the loom is changing shuttles. If the filling from the empty shuttle as it drops into the receiver box is allowed to go slack, a full-width shiner is almost certain to result, as the open shed allows full scope for looseness. The remedy is to arrange the friction in the shuttles so that the tension on the filling when the quill is almost empty is equal to that of the full one. The manner in which the shuttle is ejected is also important. A too forceful or jerky movement will cause the shuttle to drop into the receiver box too quickly, and a loose pick will result. If the prong and short spindle of the shuttle guide are covered with sheepskin, this will retard the drop of the shuttle and also assist in holding the filling at the correct tension during the motion of shuttle changing.

Shiners which appear at various places in the width of the cloth are usually caused by some mechanical defect being responsible for an incorrect check on the shuttle as it enters the box. The check straps or heel spring may be broken, or the front binder may be loose. By refacing the shuttle-box front with cloth or felt, protection is given to the delicate nature of the rayon filling. When it is noticed that shiners are appearing at the sides of the cloth, it shows almost beyond doubt that the covering is worn out. This should be attended to immediately and a new lining put in its place.

If the filling guide wire is not positioned properly, the filling will have a tendency to ride over the highest point and cause the filling to loop and make shiners. To remedy this the wire should be shaped so that it is impossible for the filling to ride over. A rough or loose picker may be responsible for shiners appearing at the sides of the cloth. In this case the filling is held lightly by the picker as the shuttle is leaving the box, but is released as soon as the flight of the shuttle gives tension to the filling. The full slackness, however, is not taken up when the pick is completed; and irregular tension results.

Selvage shiners are a prevalent defect in the weaving of wide fabrics, particularly of the plain-weave variety. They invariably appear at regular intervals along the sides of the cloth and vary from 1 to 6 in. in length. The chief cause for this imperfection may be found by observing the manner in which the filling is being held by the selvage ends on the beat-up of the pick. Where the selvage ends are too loose, the tendency is for the filling to become entwined partially around two or more of the outside ends and to remain held on a forward position (towards the reed) until the beat-up of the filling. The same results may occur from a selvage which is held too taut, the only difference being that, in this case, the filling is held in a reverse position. Where spool selvages are employed, the remedy is simply to afford correct tension, so that the filling is held clear when the shed is open. Where the selvages form part of the warp, a loose selvage can be corrected by drawing in the ends one end to a heddle eye and by putting three or four ends together in one dent. A taut selvage can be slackened by putting three or four

*Group from Whitney (S. C.) Mfg. Co. at Atlanta meeting on March 13. Left to right, George B. Moore, superintendent, J. L. Adams, overseer of carding, and V. W. Searcy, overseer of spinning.*

*D. R. Senn, general superintendent of Sibley Mfg. Co. and Enterprise Mfg. Co., Augusta, Ga., and J. W. Trigg, Oconee, S. C. at Georgia operating Executives meeting.*

ends in one heddle eye and the same number in one dent.

If it is seen that the temple is not holding the selvage out to its proper place, this should be rectified. An examination of the temple rolls often reveals that waste filling is obstructing their free movement, or stopping it completely; or it is possible that the rubber is worn smooth and is, for that reason, causing slippage. Should insuring the correct holding of the cloth by the temples or proper tension on the selvage ends fail to do away with selvage shiners, then a change in the timing of the shedding is recommended to clear up the defect. For general purposes, with a plain weave, it is advantageous to time the shedding late; e.g., making the harnesses level when the crank arm is approximately on front center. This prevents interlacing of the filling until the reed has reached the fell of the cloth, thus aiding an even beat-up of the filling at the selvages.

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# Carding and Spinning

## Problems discussed by nearly 300 operating executives at Georgia meeting

CARDING and spinning problems were discussed by nearly 300 managers, superintendents, and overseers at the spring meeting of the Textile Operating Executives of Georgia, held March 13 at the Georgia School of Technology, Atlanta, Ga. V. J. Thompson, of Griffin, general chairman of the group, presided. The carding discussion was led by Roddy A. Field, Jr., superintendent of Newnan (Ga.) Cotton Mills; the weaving session by C. K. Cobb, general superintendent of Canton (Ga.) Cotton Mills. Robert W. Philip, secretary of the association, described some of his recent impressions of the Japanese cotton-textile industry.

### Carding Session

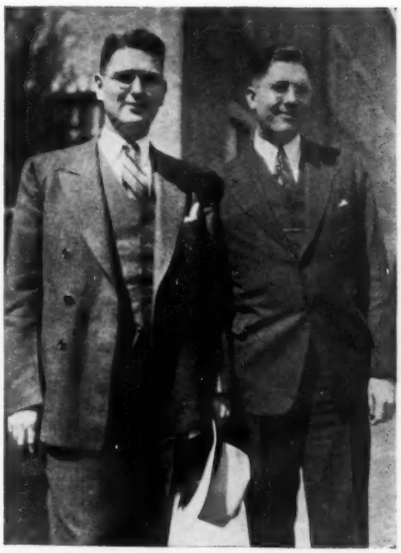
Opening the carding discussion, Mr. Field asked for a report on the percentage of short fibers (to $\frac{3}{8}$ in.) present after the cleaning processes. Harry H. Purvis, superintendent of Chicopee Mfg. Corp. of Ga., Gainesville, reported that with 1-in. strict-low middling cotton he estimates approximately 8% of the bale is $\frac{3}{8}$ in. or under and that there is a 1% increase in the finished lap. Card sliver usually contains about 5%, which means that 4% of the short fibers are removed. Of the total waste taken out by cards, about 54% of the short fiber is contained in the fly and 25% in the strips. At Chicopee a one-process picker with three beaters is used. Beaters consist of a Buckley beater in the rear operating 350 r.p.m., a two-blade beater next operating 975 r.p.m., and a Kirschner beater last turning 1,025 r.p.m. Also, the picker arrangement contains a six-blade beater operating 312 r.p.m. in the blending reserve. Laps average 13½ oz. per yd. with a maximum variation of ½ to ¾ oz.

With new high-draft roving frames, Allen Jones, superintendent of Muscogee Mfg. Co., Columbus, recommended the use of Koroseal covering for the front roll and cork for the three back rolls. He gets about 10 lb. of 55-grain sliver per hour from ⅞-in. cotton. Another member, from Martha Mills, Thomaston, reported that the two front rolls there are covered with this same synthetic compound, while the two back rolls are of steel. There is a draft of 51½ on drawing and 57 on long-draft speeders.

Opinion was divided as to the best type of drive for fly frames. Some members preferred belt drives on the ground that motors located on the floor get dirty too easily and start the frames too suddenly. Others asserted that individual drives are much better for this purpose because belt slippage is largely eliminated, there are no dangerous and unsightly overhead pulleys, and proper application of clutch assures smooth starting of the frame.

The use of a bale mixer was strongly advocated by Allen Jones, who cited a test as follows: A 12-lb. "slab" of cotton was dyed sulfur blue and dumped into the mixer along with 500 lb. of ordinary white cotton. After ½ hr., all the dyed cotton had passed through the mixer and the resulting blend was evenly and completely peppered with blue cotton, showing that mixing was very thorough. No test was run on breaking strength, but some improvement was noted. In answer to a question, Mr. Jones said that probably several hoppers feeding on to an extended apron would have a similar mixing effect. However, space in his mill prevents such an arrangement, and consequently he has no real knowledge of what would happen.

The relation between size of calender-roll trumpet and coiler-head trumpet on cards was agreed to be very important, since a worn trumpet can cause a variation of 1 to 2 lb. per can, even though the same lap and draft-setting are used. R. P. Sweeney, superintendent of Exposition Cotton Mills, Atlanta, said the ratio should be about 2 to 1—.312 in. at calender roll and .165 in. at coiler, for example. He pointed out that the square root of the grain-weight of card sliver multiplied by .142 would give the proper position of the trumpet. He uses a multiplier of .118 on the first drawing and .115 on the second.



*Discussion leaders at Georgia meeting.—C. K. Cobb, (left) general superintendent of Canton (Ga.) Cotton Mills, who led spinning session, and Roddy A. Field, Jr., superintendent of Newnan (Ga.) Cotton Mills, in charge of carding section of meeting.*

Several mills reported that use of Koroseal roll covering for drawing frames would prevent lapping-up and eyebrows. In fact, this material came in for praise at various times during the meeting; and the only objection voiced was that there is a slight tendency for the rolls to harden and flute over the week-end, but this was said not to be serious.

Colored roving can be run through the card room without keeping weights on the speeders, it was agreed, providing the cotton is properly selected and dyed in the first place. Weights should be checked if necessary on section beams. Incidentally, it was pointed out that much of the trouble experienced with dyed cotton is due to its having dried out during storage.

### Spinning Forum

"How does long-draft spinning affect the slashing of yarn?" asked Mr. Cobb at the beginning of the spinning discussion. R. S. Steele answered that with long-draft spinning he can get

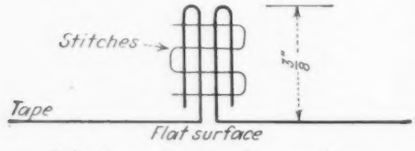
# The Overseer's Corner

### S. T. A. MEETINGS

***At a meeting of the executive committee of the Northern North Carolina-Virginia Division of the Southern Textile Association it was decided to hold the spring meeting on April 24, at Leaksville, N. C. There will be a talk on air-conditioning in textile mills and the announcement of tests run by several mills on the best method of running western and local cotton. Members of the executive committee present were L. J. Rushworth, Riverside & Dan River Mills, Danville, Va.; L. V. Andrews, Martinsville (Va.) Cotton Mills; W. Lexie Davis, Cone Mills, Greensboro, N. C.; L. A. Elmore, Rhodhiss (N. C.) Mills, and J. O. Thomas, Marshall Field & Company, Spray, N. C. The annual meeting of the Southern Textile Association will be held at Myrtle Beach, S. C., probably June 11 and 12.***

neither weight nor speed without first reducing the number of the yarn and increasing the amount of size by about 2% on 22s. This treatment was said to be necessary also in order to care for excess fuzziness characteristic of his long-drafting. Other members reported similar trouble with fuzzy yarn, and several advocated the use of extra gum to care for it. In contrast to these reports, Mr. Sweeney declared that his long-draft yarn runs much smoother than the old short-draft, and the breaking strength is 8 to 10% greater. His maximum draft is 18½, although 15½ to 16 is the average for double-roving warp yarns. Fuzziness might be caused, he warned, by incorrect spindle speeds, excessive draft, or irregular cotton fibers.

Snick-plate gage settings on automatic spoolers were reported at various plants as follows: Fairfax (Ala.) Mills —.035 on 14s, gage not changed with variation in yarn numbers; Columbus (Ga.) Mfg. Co.—.046 on 21s or 25s, gage ordinarily set according to amount of cleaning deemed necessary; Fulton Bag & Cotton Mills, Atlanta—.068 on 10s, 11s and 14s, ⅞-in. cotton; Martha Mills, Thomaston—.055 on 14s; Pacolet Mfg. Co., New Holland—.045 on 13s to 17s, .042 on 21s to 23s.




***Spinning tape may be sewed together by turning back ends ⅜ in. twice, and sewing through four layers of fabric. With both ends turned in same direction, bottom side is left completely smooth and flat.***

Break drafts in use with long-draft spinning were reported as follows: Pacolet Mfg. Co., New Holland—1.31 on 8s to 26s warp and filling; Lanett (Ala.) Mill—2.27 on H&B American frame, 1.31 on Whitin, and 1.28 on Saco-Lowell; Trion (Ga.) Co.—1.22 on 2s to 22s; Callaway Mills, Manchester —1.32 on 2½s to 30s.

The most popular method of hauling warp yarn from the frame to the spooler seemed to be by use of ordinary trucks, although one member reported the use of a double-decked truck. At Pacolet Mfg. Co., a storage-bin and conveyor-belt system is in use. Consensus was that the yarn should undergo as little handling as possible.

Spinning tape is fastened together in various ways in Georgia mills—by clipper laces, by buckles, and by ordinary sewing. Tapes fastened with clipper laces ordinarily are made up in lots of 100 and stored for future use. Good results were reported by one mill which turns the ends of the tape back ⅜ in. twice and sews four or five stitches through the four layers of tape. Turned back as illustrated in Fig. 1, the tape does not present a bulky joint and, it is contended, resists turning over to a marked degree.

As during the carding session, Koroseal roll covering for spinning came in for discussion and received general praise. One mill reported using this material on four frames (making 30s warp with a 17.14 draft) for 4½ months with, as yet, no rebuffing. Furthermore, the breaking strength is the same as for calf, and eyebrows give no trouble. Another mill which has been operating 3,000 spindles equipped with this material for some time asserted that the only replacement was due to "some scoundrel cutting one roll with a knife." No ends-down tests on the material were reported.

Overhead cleaners generally permit reduction of humidity necessary to operate spinning room, it was agreed. The revolving-type top cleaner seemed to be the more popular.

Directors were elected to replace Frank Asbury, Jr., Harry Purvis, and Allen Jones, whose terms of office on the executive committee had expired. Mr. Purvis was reelected for a two-year term. George Glenn, of Pepperell Mfg. Co., Lindale, was elected for a two-year term. W. H. Gibson, of Martha Mills, Thomaston, was elected to serve two and one-half years.

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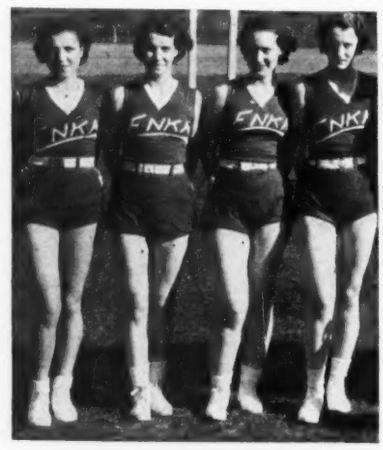
# *Basketball Tournament*

## Southern Bleachery and Enka win over 83 teams

OVER 6,000 spectators crowded into huge, sprawling Textile Hall at Greenville, S. C., a month before the recent Southern Textile Exposition for the finale of another textile event—the Southern Textile Basketball Tournament. Originated in 1921 with eight teams, the tournament has become one of the major sporting affairs of the South. This year (March 3 to 6) there were 83 teams entered with 634 players, of whom 174 were girls. Participants and fans came from Alabama, Georgia, North Carolina, South Carolina, Tennessee and other southern textile States.

Champions for 1937 were as follows: Class A Boys—Southern Bleachery & Piedmont Print Works, Inc., Taylors, S. C. (defeated Spartan Mills, Spartanburg, S. C.); Class A Girls—American Enka Corp., Enka, N. C. (defeated Chatham Mfg. Co., Winston Salem, N. C.); Class B Boys—Peerless Woolen Mills, Rossville, Ga. (defeated Fairfax Mill, of West Point Mfg. Co., Fairfax, Ala.); Class C Boys—Woodside Cotton Mills Co., Greenville, S. C. (defeated Judson Mills, Greenville).

The tournament is strictly an amateur affair, and no team can use a player who has not been on the mill payroll for at least 90 days prior to the regular playing season. This regulation tends to keep out "ringers." Two playing courts were in use this

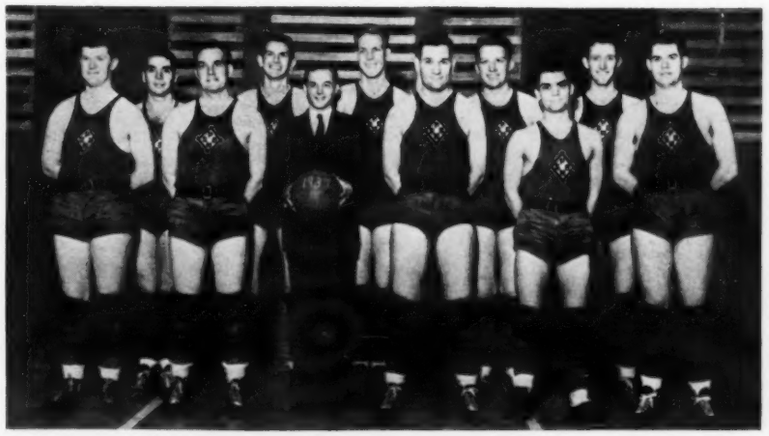



***Four members of the American Enka Corp., Enka, N. C., girls' team which won the Class A Girls' Division.***

year, with contests going on from 9 a.m. to 10:30 p.m. each day of the meet. A staff of eight experienced referees was used, and it is interesting to note that in the hundreds of games which have been played since the beginning of the tournament, practically no protests have been made as a result of referee decisions.

Among the outstanding trophies offered this year was a 35-in. "honor trophy" presented by Corn Products Co. which will become the permanent possession of the team which wins it three times. In addition the same company presented gold basketballs to the winning team, its coach and manager. Each succeeding year the company will give a trophy to go along with the honor trophy but which may be retained by the winning team. This year's presentation was made by U. S. Senator Ellison Durant Smith of South Carolina.

Officers of the tournament association are selected from men prominent in the community and athletic life of the textile communities from which the teams are drawn. For 1937, they are as follows: Harley Heath, Pelzer, S. C., president; Chester L. Eddy, Renfrew, S. C., vice-president; Horace Whitmire, Greenville, vice-president; Ted Crain, Spartanburg, S. C., vice-president; T. J. Ballenger, Lanett, Ala., vice-president; John H. Garraux, Greenville, secretary; Mrs. Louise Agee, Enka, N. C., girls' host; and G. L. Doggett, Piedmont, S. C., boys' host. Charles V. Verner, Piedmont, a vice-president, who has served the tournament for the last thirteen years in various capacities including the positions of president and treasurer, resigned this year.



*Southern Bleachery & Piedmont Print Works, Inc., Taylors, S. C., winners in the Class A Boys' Division of the Southern Basketball Tournament held last month in Textile Hall, Greenville, S. C.*

*Honor Trophy won this year by Southern Bleachery & Print Works. At right, Jno. R. White, southern manager of Corn Products Co., the donor; at left, John H Garraux, secretary of Southern Textile Basketball Tournament Association.*

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# *Personal News*

**G. V. Hanna,** formerly with Cleveland Cloth Mills, Shelby, N. C., has become assistant superintendent of Mooresville (N. C.) Cotton Mills.

**Allie H. Holt,** formerly overseer of spooling, winding, warping and chain beaming at Patterson Mills, Roanoke Rapids, N. C., now holds a similar position with Cherokee Spinning Mills, Knoxville, Tenn.

**Everett A. Wilkinson** has been appointed overseer of dyeing for Darlington Fabrics Corp., Newton, N. J.

**M. B. Odell** has resigned as overseer of weaving at Durham Cotton Mfg. Co., East Durham, N. C.

**M. R. Minnish** is now second hand in the cloth room of Clinchfield Mfg. Co., Marion, N. C.

**Paul Chase** has been made overseer of dyeing at Perennial Dye and Print Works, West Warwick, R. I.

**Albert Goddark** is still finisher at Cocheco Woolen Mfg. Co., East Rochester, N. H., and has not left the concern, as was erroneously reported in the February issue.

**E. C. Kistler,** formerly with Spencer Mills, Inc., Spindale, N. C., is now overseer of carding at Smithfield (N. C.) Mfg. Co.

**T. I. Dashiell** is now assistant superintendent of Gaffney (S. C.) Mfg. Co.

**Robert Melton** has been appointed second hand in day carding at Imperial Cotton Mills, Eatonton, Ga.

**Lewis N. Peeler,** formerly night overseer of spinning at Marlboro Cotton Mills, Bennettsville, S. C., is now with Jennings Cotton Mill, Lumberton, N. C.

**Fred Bryden** has accepted the position as overseer of finishing at Great Barrington Mfg. Co., Great Barrington, Mass.

**A. N. Platt** is now overseer of knitting at Thermo Mills, West Sand Lake, N. Y.

**Reid Lockman** has become second hand in spinning at Beaumont Mills, Spartanburg, S. C.

**Freeman Sands** is now overseer of dyeing and finishing for Saybrook Co., West Warwick, R. I.

**L. E. Hooper** has resigned as overseer of weaving on the second shift of Balfour (N. C.) Mills.

**J. A. Fraser** is now overseer of the finishing department at Queens Dyeing Co., subsidiary of United States Finishing Co., Providence, R. I.

**Will Wray** has accepted the position of overseer of the card room of the Dunn Mill, Gastonia, N. C.

**Cyril Byron** has accepted the position as overseer of dyeing for Barre Woolen Combing Co., South Barre, Mass.

**James Smythe** has become overseer of weaving, second shift, at Balfour (N. C.) Mills.

**Sam R. Moreland,** formerly with Judson Mill, Greenville, S. C., has accepted the position of overseer of spinning at the Monaghan plant of Victor-Monaghan Co., also of Greenville.

**William Nelson** has been promoted to overseer of finishing at Beaver Brook Mills of the American Woolen Co., Collinsville, Mass.

**P. B. Batchelor** is the new overseer of night carding, Imperial Cotton Mills, Eatonton, Ga.

**Fred K. Morris,** formerly with Firestone Cotton Mills, Gastonia, N. C.,

has accepted a position as overseer of spinning at the Simpsonville plant of Woodside Cotton Mills.

**W. D. Thornburg** has become assistant superintendent of Golden Belt Manufacturing Co., Durham, N. C. He was formerly superintendent of Fountain Cotton Mills, Tarboro, N. C.

## The Overseer's Corner

**Harry Steward** has been named overseer of finishing at Eastland Woolen Mills, Corinna, Me.

• • •

# Questions & Answers

### Hosiery Holes and Dry Bars

Technical Editor:

I am inclosing a piece of stocking made on a machine that has been giving us trouble for some time. This just shows up once in a while. The machine is set to gage and everything seems to be O. K. As you will notice on the sample, the cut holes are only on the sides. Anything you can find to help us out will be greatly appreciated. (8413)

The fourteen dry bars across the sample submitted appear to have been caused by the silk drying out while the machine was stopped, and all of the holes are in the dry bars.

We believe the holes are caused by too much flexibility of the needles while the dividing takes place. The modern, short needles are quite rigid, and dry silk is not so elastic as wet silk. A 14-in., 45-gage head has 420 needles; and when you move the bar 0.001 in. at the thread-drawing level, you take up 0.840 in. of thread. Since the wet silk does not cut, you may not be more than 0.002 or 0.003 in. too heavy on the dividing.

We recommend that you ease off a trifle on your presser-cam rollers until the cutting in the dry silk stops. If any needles mispress, which is unlikely, you can stop that by raising the press bits in the presser cams. You require only a fine adjustment of your machine.

### Effect of Bleach on Knit Goods

Technical Editor:

Inclosed you will find two pieces of fabric, each counting about the same number of stitches, but the appearance and feel of the pieces are very different. The swatch marked "A" was bleached with chlorine preparatory to dyeing, while the swatch marked "B" was bleached with peroxide. In your opinion what has caused the difference in appearance and handle of these two fabrics? There is no way of checking up now concerning the appearance of the same swatches in the greige. (8384)

From our examination of these samples, we are of the opinion that the chlorine-bleached piece was boiled out more thoroughly than the one bleached with peroxide. This has made the yarn seem finer and smaller and has given it a more washed-out effect; consequently the chlorine-bleached piece does not have a full feel and handle.

It has been our experience that this difference between chlorine bleach and peroxide bleach frequently exists. In other words, cloth bleached with peroxide is seldom prepared as extensively as cloth bleached with chlorine, and the peroxide-bleached fabric has a more clothy feel and handle. Likewise, it may be that in the case of the chlorine bleach an oil type softener has been used, whereas in the case of the peroxide bleach a tallow or hard-fat type of softener has been used. This difference in feel and handle exists between oil-finished goods and tallow-finished goods.

### Water for Rayon Plants

Technical Editor:

We are desirous of obtaining some information regarding the water requirements of a rayon spinning plant. The two questions which we should like answered are: (1) What is the maximum amount of iron and hardness permissible in water which has been purified for use in the manufacture of rayon yarns? (2) What is the maximum amount of hardness and iron permissible in the raw water, beyond which it is not economical or practicable to purify it for use in rayon manufacture? (8376)

It is generally considered that the iron content of water for use in rayon manufacture should be less than 0.1 part per million expressed as the element Fe. The hardness should be zero.

Manufacturers of water purification equipment state that an almost unlimited amount of iron can be removed from any water at a relatively small cost and that, in fact, iron often aids greatly in the purification of many waters. They state also that, as a very large amount of water is used in the manufacture of rayon, if the raw water has a hardness of appreciably over 10 gr. per gal., the cost of making this water 100% soft will, as a rule, be too high to permit its economical use.

### Luster Finish on Cotton Sheeting

Technical Editor:

I shall appreciate your advice regarding the following problem: How is silk size prepared? I refer to a sizing which gives luster and body, such as dry-cleaners use in restoring luster to silk garments. By a fine-spray process, I wish to give one side or surface of a white, bleached cotton sheeting a lustrous or silk-sheen finish. I should like to prepare this luster size myself in order to control the degree of luster. Textile sizings (plain, transparent, and other types) can be purchased here. What substance is added to make it a luster sizing or silk size and where can it be purchased? This white sheeting is for a commercial use, and the luster finish need not be perfect, very lasting, or expensive. (8409)

Most of the silk-size preparations which are used by dry-cleaners to restore luster to silk garments are gelatin solutions, some of which contain a small amount of sulphonated oil to impart flexibility and pliability where the gelatin solution is used heavily or where a great deal of body is put into the garment. However, this method is not satisfactory for finishing white, bleached cotton sheeting. In order to give a luster-finish to white, bleached cotton sheeting, the sheeting must be thoroughly singed and then filled with a combination of starch, dextrin, and a soluble luster oil. The final luster or sheen is not produced in the sheeting until the sheeting is given a calendering.

These soluble luster oils contain a sulphonated base oil and this has incorporated in it a water-white mineral oil which, after calendering, develops the luster and sheen. It is quite difficult for the ordinary mill to make these soluble luster oils from the sulphonated oil and the white mineral oil. That is, the sulphonated oil must be adjusted to take up and hold the mineral oil, and this adjustment requires a skilled oil chemist.

One excellent luster finish, which is frequently used on white bleached sheeting, is made by boiling 10 lb. of tapioca flour in 75 gal. of water, cooling to 180° F., and stirring in 1 qt. of a good luster oil. The sheeting is padded through this solution, dried on dry cans, and then calendered through a 5-roll calender.

### Printed Effect on Permanent-Finish Fabric

Technical Editor:

I am inclosing herewith three small samples of fabrics. These fabrics have evidently been given a permanent finish and then designs have been printed or embossed on the material. Will you kindly advise me whether the effect is obtained by embossing or by printing. (8408)

Our examination indicates that these fabrics were given a permanent finish by the Heberlein process and that the white designs were then obtained by the usual printing process.

### Acetate Taffeta Wavy

Technical Editor:

We appreciate the information you gave us on waviness in taffeta (TEXTILE WORLD, Feb. 14, p. 95), but before we received it we were successful in solving our trouble. In the hope that our solution will be helpful to others, we are outlining it as follows:

We were using a C-model Draper loom running at 150 r.p.m. The weave was a taffeta or 6-harness plain, and the yarn in both warp and filling was acetate, 150/40. We were putting in 48 or 50 picks per inch.

We have an automatic let-off motion on this loom with corks for a check to hold tension on the beam. We found it necessary to take the let-off motion down when the warp came off the loom and wash the let-off with a good solvent to be sure there was no grease or dirt in it.

We followed the same procedure with a number of the looms and found in most cases that it was necessary to insert new corks. Then we found we were not using enough tension on our acetate warps and that our vibrator rods to the let-off were badly worn. We replaced these rods. Also, we discovered that some of our pick wheels were not round, in some cases one side being off at least ¼ in., a defect which causes this type of let-off to operate improperly.

L. F. HUCKS

# New Machinery and Processes

### *"Knitting Loom"*

• An improved machine for producing wide-mesh fabric, developed by Morrow & Morse, Inc., New York, is being offered by National Textile Co., 484 Globe St., Fall River, Mass., acting as sales agent. It is called the Morrow-Morse "knitting loom," the last two words signifying that the machine combines certain principles of knitting and weaving.

The type of fabric which the machine produces is the same as that made by the Tisch machine. Like that machine, it knits its warp in individual lines or wales of loops and lays its filling back and forth between those wales.

The warp is fed from individual spools placed on a pin board under the machine, and the ends pass upward through a stop motion and tension devices to a knitting mechanism which closely resembles the knitting mechanism of the more common types of warp-knitting machine. In other words, the needles lie in a flat horizontal bed and project toward the front of the machine; and the eyelet guide for each warp yarn makes a circular movement to wrap the yarn around the shank of the needle and thus form a loop. The needles used, however, are of the so-called "patent" or "lace" type, with beards that open sidewise and require no pressing. Unlike ordinary warp knitting, the yarn guides do not shift sidewise to lay loops on different needles, but operate always on the same needles. The needles can be inserted in different slots to provide any mesh width or variations in width.

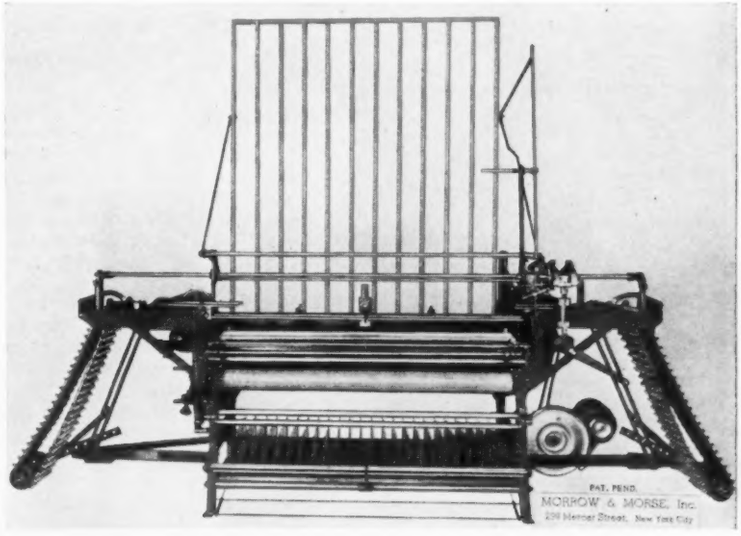
The filling is likewise fed from spools, and these are located in a tall creel extending above the machine. Each filling yarn (or group of yarns to be operated as one) is fed to a small vertical tube mounted in a finger or "carrier" depending from a "carrier rod" which extends across the machine. On the standard machine eight carrier rods are provided, any number of which can be used for a given pattern.

Just as all heddles in a loom that operate alike can be mounted on one shaft or harness, all carriers in this machine that operate alike can be mounted on one carrier rod. During the knitting of one block of the pattern—or, rather, one horizontal series of blocks—each carrier traverses only the distance necessary to lay its yarn from one knitting wale to another and back again. At the next series of blocks, in the more common patterns, if may shift sidewise to lay the yarn between two other wales, leaving the space between the original two open.

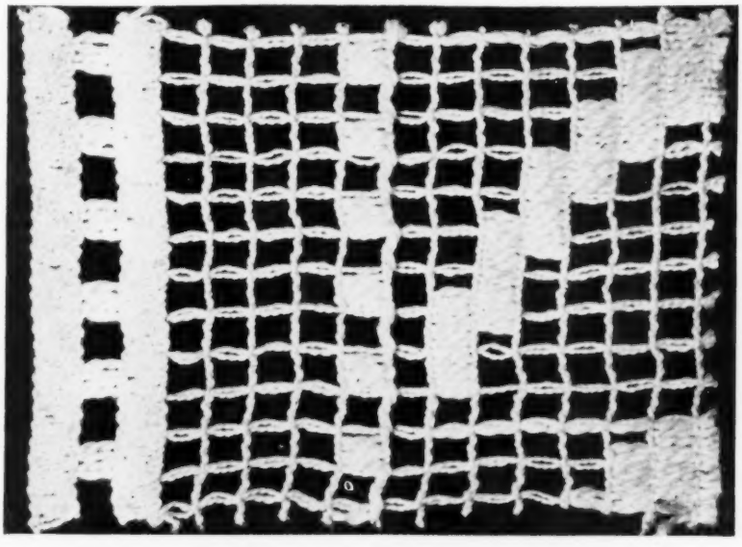
The carrier rods are made to traverse by the pushing action of pattern chains, one at each end of the machine. These chains reciprocate back and forth, and they are fitted with projecting bolts of various lengths, each bolt striking an individual rod and pushing it a distance governed by the length of the bolt. The chain progresses, of course, to present a different bar or row of bolts for each change in the pattern.

It is in the operation of these chains that one of the special advantages for the Morrow-Morse machine is claimed. The distance of a chain from the ends of the traverse rods can be adujsted to the maximum length of bolt, so that when only short bolts are used for a given pattern there is no lost motion and the machine can be operated at higher production. The chains are rigidly supported to prevent wabbling at speeds which may run as high as 100 cycles per minute. A heavy, strong clutch is also provided. The machine makes two cycles for one revolution of the drive shaft, which is connected to a ½-hp. motor or to a lineshaft. Ball bearings are provided for the followers on pick cam and warp-bar cam and for the pattern chains. As on a loom, the speed of the take-up controls the number of picks per inch.

KNITTING LOOM



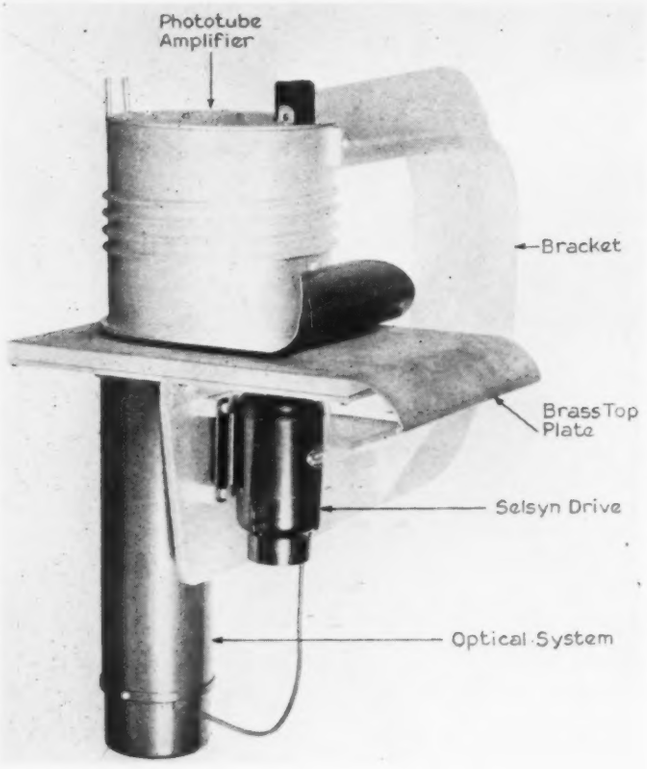

THE PRODUCT



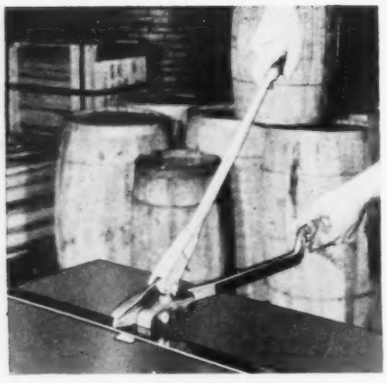
The standard machine allows for fabric widths up to 54 in. This capacity is said to be considerably greater than that of previous machines of this character; and the builder is willing to provide even greater widths if required. Curtain yard goods, with selvages, can be produced, and also complete curtains with borders on top and bottom ready for stitching. Wash cloths, scarfs, and laces are among other products possible. Several leno weavers and lace manufacturers have already made installations, it is reported.

### *Rubberizing Compound*

• Several years ago the Self-Vulcanizing Rubber Co., 605 W. Washington Blvd., Chicago, produced a rubber coating which




CLOTH STRAIGHTENER

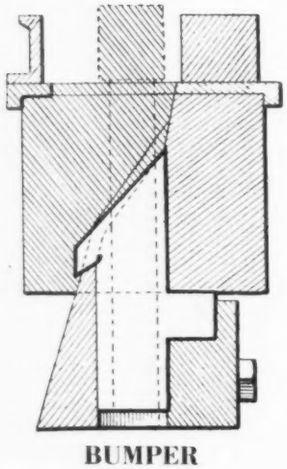


CUTTER

could be applied to metal or other surfaces after two priming coats had been used. The company's latest development is Selfvulc Insulator, which incorporates the quality of a primer with a self-curing, cold-curing rubber which can be applied by unskilled labor by dipping, spraying, or hand brushing. The product is said to make a steadfast bond in one application, but as many coats as desired may be added. A vulcanizing period of one hour is required between application of the coats and the shrinkage is stated to be negligible. In addition to being an insulator and waterproofer, the product resists corrosion caused by alkalies, salt solutions, and mild acids and their fumes.

### *Steel-Strap Cutter*

• A shear for cutting flat steel bands has been marketed by Acme Steel Co., 2833 Archer Ave., Chicago. Leverage produced by the toggle action of the handles of the shear is said to make the last portion of the cut as easy as the first, and ¾- and 1¼-in. bands are handled quickly. The tool has been designed to prevent fatigue on the part of the operator, and the stationary handle protects the user's hands. A single stroke of the upper handle makes the cut.



BUMPER

### *Picker-Stick Bumper*

• Ease of installation is one of the features of the Bondaron picker bumper placed on the market by Charles Bond Co., 617 Arch St., Philadelphia. The bumper is designed so that it can be clamped in the operating position without removing the bolts which hold the quill chute or deflection plate in position and without the necessity of passing one or more of the bolts through the bumper. The bumpers are made from laminated leather and the picker comes in contact with the flat side in order to increase durability. The forward motion of the picker stick is cushioned against the bumper and the possibility of splitting the wooden quill is also reduced.

### *Cloth Straightener*

• Announcement has been made by General Electric Co., Schenectady, N. Y., of a cloth-straightening control which employs phototubes to detect very small amounts of bowed filling during the tentering process on cotton cloth. The new control makes use of the frequency of interruptions, by the filling threads, of light directed upon the phototubes. This frequency of light interruptions, when properly amplified, controls the operation of the motor driving a mechanical straightening device, thus removing the bow from the cloth. Uniformly straight cloth, increased production, and elimination of operator's eye fatigue are among the advantages listed.

The development substitutes electric for manual control in the operation of the "straightening" motor on the cloth-straightening equipment built by Winsor & Jerauld Mfg. Co., 1268 Eddy St., Providence, R. I. In the new scheme, two phototubes—one on each side of the tenter frame—are mounted over the cloth. Light sources are located directly beneath the phototubes so that their narrow beams (2.125x0.005 in.), after passing through the slots of a Selsyn-operated disk, pass through the weave of the cloth to the phototubes. As the cloth moves under the tubes, the filling threads interrupt the light beams, thus producing definite light frequency inputs to the tubes. If the cloth is straight, the frequencies on the two phototubes will be equal. If, however, the cloth is bowed, more light interruptions by filling threads will reach one tube than the other and the frequencies on the tubes will be unequal. Inasmuch as the amplifier, with which each tube is equipped, is connected to a frequency responsive circuit, this inequality of frequencies will operate relays which, through a magnetic switch, control the operation of the straightening motor. This motor, in turn, advances or retards one chain of the tenter with respect to the other until the bow is removed.

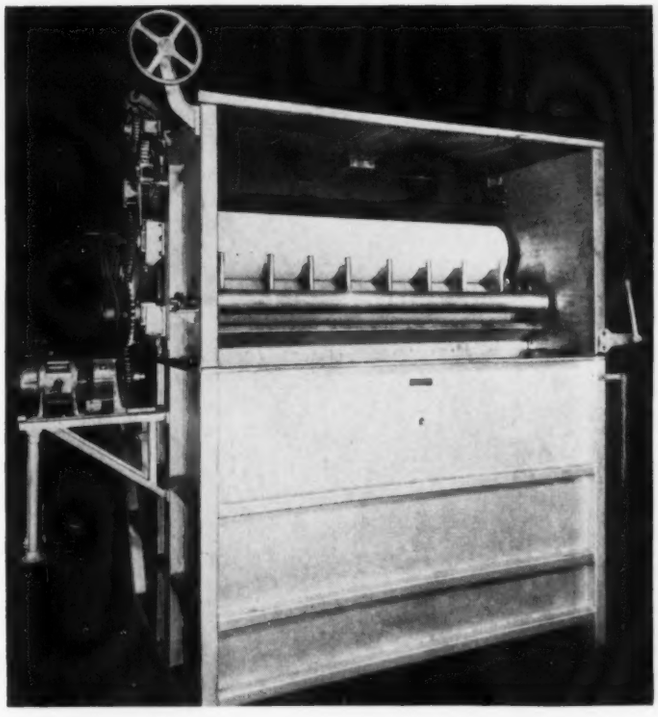
The control is sensitive over a wide range of operation. Cloth speeds may vary from 20 to 140 yd. per minute, and the filling-thread count may vary from 20 per inch in open-woven curtain material to 100 per inch in closely woven shirting. Combining these limiting features, it is apparent that the frequency to which the control must be sensitive varies from 280 to 8,400 cycles per second.

### *Cotton Fiber Analysis*

• Nazir Ahmad and C. Nanjundayya of the technological laboratory of the Indian Central Cotton Committee have evolved a method and apparatus for determining the average length and fineness of cotton fibers. The essential features of the method, as described in a bulletin issued last July, consist in cutting a representative tuft of fibers, with one end in alignment, into three parts; the first part extending to a known length from the aligned end, the second part also having a known length, and the third part containing fibers of different lengths. The three parts are separately weighed. The average length of the

third portion is computed by multiplying the ratio of the weight of the third part to that of the first by the known length of the first part. The average length of the whole tuft is obtained by adding up the individual lengths of the three parts. The fiber weight per unit length may also be determined by counting the number of fibers in the first section prior to weighing and dividing the weight of the tuft by the number of fibers and the average length.

The apparatus is designed to carry out these tests quickly and accurately.



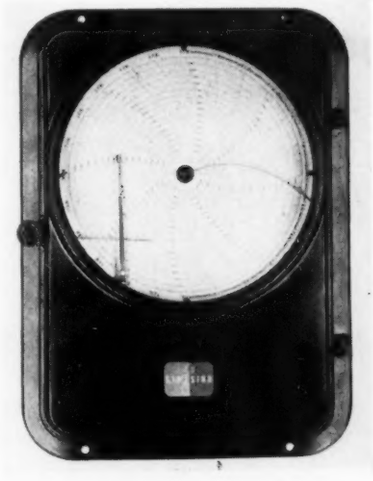
WOOL WASHER

### *Metal Wool-Washer*

• Riggs & Lombard, Inc., Lowell, Mass., have designed an all-metal washer for the handling of woolens, worsteds, and felts. The machine is made entirely of stainless-clad steel with all-welded construction. For these reasons, up-keep cost is said to be reduced to a nominal figure and the equipment remains clean and stainless. The main rolls are rubber, while the carrier rolls are stainless metal. No wood is used anywhere.

### *Round-Chart Potentiometer*

• A recording potentiometer of the round-chart type, known as the Pyromaster, has been developed by Bristol Co., Waterbury, Conn. This recording potentiometer is available as a pyrometer, tachometer, resistance thermometer, millivoltmeter, and milliammeter. Among the advantages claimed for the instrument are that it requires no lubrication; it is not affected by normal plant vibration; there is no mechanical motion of any kind, except when a change in the measured quantity takes place; and it can be used under rough plant conditions where the air is laden with dust, moisture, and corrosive fumes. The operating mechanism is constructed of five small, compact units which are replaceable. There are no mechanical connections between the galvanometer unit and the other units. The pen is actuated in such a way as to follow changes in the measured quantity as they occur and at a rate dependent upon the rate of change.

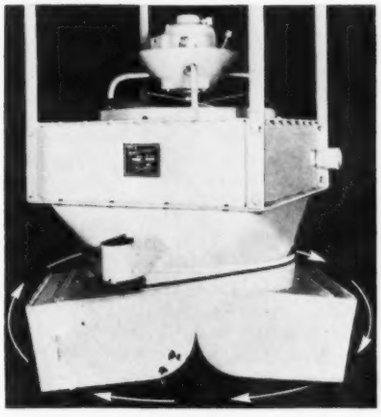


**POTENTIOMETER**

### *Unit Heater*

• All-direction distribution of heat combined with thorough penetration is the advantage claimed for the new revolving-discharge unit heater developed by L. J. Wing Mfg. Co., 7th Ave. and 14th St., New York. The moving air streams sweep slowly around through 360°, covering successively every direction. The air velocity is sufficient to carry the heat to the walls and remote corners, it is said, and the constantly changing direction of flow causes the air to find its way around obstructions.

Uniform heating is accomplished even in rooms and plants which are especially difficult to heat, according to the manufacturer. The directed air stream delivers the heat in the working area; and each part receives and stores heat as the warm streams pass around.



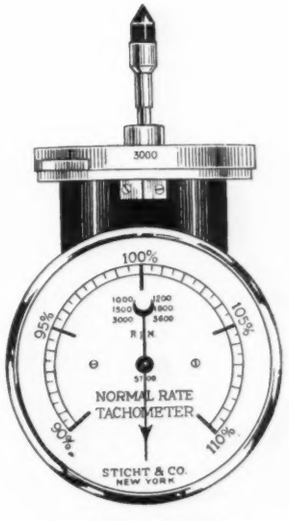
**HEATER**

### *Normal-Rate Tachometer*

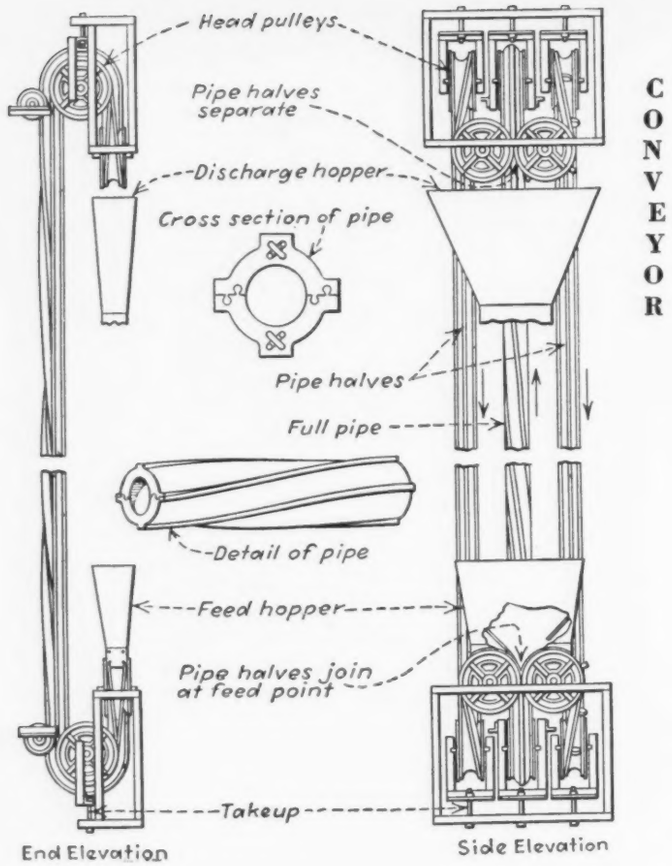
• Normal rates of rotation or speeds can be tested with the Standco normal-rate tachometer placed on the market by Herman H. Sticht & Co., 27 Park Place, N. Y. The graduation of the dial is in percentages, the normal speed always being indicated by 100%, and readings between 90 and 110% can be read to a fraction of 1%. Setting to the desired normal speed is accomplished by rotating the cover until the appropriate speed figure comes into line with an index. Two types are made which vary only in the speed ranges, and gear attachments are also available for either reducing or raising the range.

### *Improved $CO_2$ Meter*

• Features incorporated in the improved $CO_2$ meter placed on the market by Republic Flow Meters Co., 2240 Diversey Parkway, Chicago, include the following: The meter is driven by a fractional horsepower electric motor and requires no water



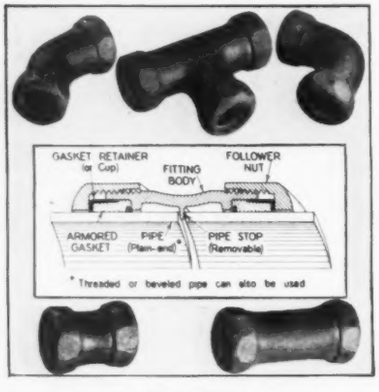

**TACHOMETER**




for its operation; there is no possibility of stoppage in the gas line, as the instrument has a suction capable of drawing 14 in. of mercury; the caustic tank holds enough potash to last from 4 to 6 months; temperature variations have no effect on the meter readings; a filter in the gas line removes all $SO_2$ from the flue gas before it reaches the analyser; a permanent continuous pen-line record is inscribed which may be read directly in percent $CO_2$; and arrangements of indicators and recorders may be made to fit any requirement.

## *Standard Threadless Pipe Fittings*

• Cutting pipes to exact lengths, threading, grooving, flaring, or screwing up joints are not necessary with the standard line of Dresser Style 65 fittings, according to an announcement made by S. R. Dresser Mfg. Co., 817 Fisher Ave., Bradford, Pa. Nothing but an ordinary wrench is needed to make a joint.




**FITTINGS**

After inserting the plain-end pipe into the fitting (which comes completely assembled), it is only necessary to tighten two threaded octagonal follower nuts with a few turns of the wrench. As this is done, resilient gaskets at each end of the fitting are compressed tightly around the pipe, forming a seal. The resulting joint, Dresser engineers state, absorbs normal vibration, expansion and contraction movement, and permits deflections of the pipe in the joint. If the pipe is already threaded, it can also be joined in the same way.

## *Conveyor*

• Dry and wet solids as well as liquids are handled in a novel manner by the conveyor manufactured by Johns Conveyor Corp., 605 Broad St., Newark, N. J. The essential element is a flexible rubber pipe which is made in two half sections. In operation, the two half-sections of the pipe are separated and the material to be conveyed is run into a half which has partitions every foot or so. These partitions serve to keep the material from slipping on vertical lifts. The two halves are joined together with double tongue-and-groove joints and further sealed by a slight twist that is given to the pipe by the conveyor pulleys. The pipe can be run in any direction and with as many turns as necessary. At the discharge point, it is only necessary to split the two sections of the pipe apart.

The conveyor pipe is available in diameters ranging from 2 to 12 in., capable of handling from 6 to 1,000 tons per hour of material weighing 100 lb. per cubic foot. Among the advantages cited are the following: noiseless; minimum of breakage and dust; no vibration transmitted; low power requirements; resistant to abrasion.

## *Overload Switch*

• A new thermal overload switch for fractional-horsepower motors, operating on line current and arranged for convenient mounting on the conduit or terminal box of the motor, has been placed on the market by the General Electric Co., Schenectady, N. Y. It is completely self-contained and has no links or plugs to be replaced.

Known as the Thermo-tector, the device automatically disconnects the motor from the line, when an overload occurs, before the motor reaches a dangerous temperature. Then, when the motor has cooled, it is automatically reconnected to the line, the entire operation being repeated at a safe interval until the motor is freed of overload or is removed from the line.

Where the automatic-reset feature is not required, a form of the new switch is available which can be used to disconnect the motor from the line and leave it disconnected until the device is manually reset.

**SWITCH**

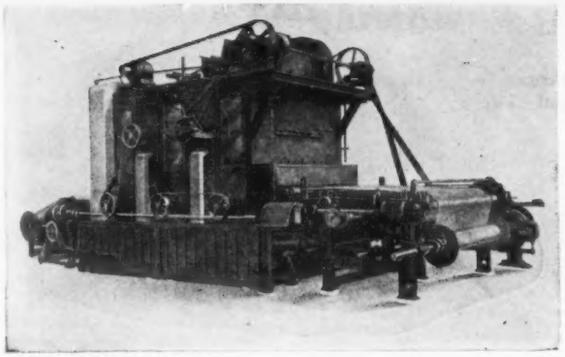
## *Acid-Resistant Floor*

• Diabase and quartz are combined by a new flux to form Rockflux, the acid-resistant floor material developed by Flexrock Co., 800 N. Delaware Ave., Philadelphia. The product may be used 1 in. thick as a total floor over old or new concrete and is said to produce a hard, firm surface which is particularly suited for use in dyehouses and other places where moisture conditions are severe. When used for repairing, little chipping is necessary and the material need only be ½ in. thick.

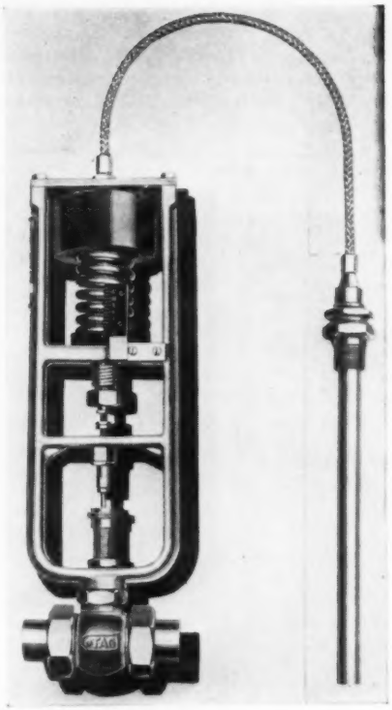
## *Improved Slasher*

• A number of improvements have been made to the Zell rayon slasher, according to American Obermaier Corp., 11 49th

**FLOOR**



SLASHER



CONTROLLER

Ave., Long Island City, New York. This machine makes use of hot air to dry the warps, and the original model was described in TEXTILE WORLD, March, 1934. In addition to the supply of hot air induced into the skeleton cylinders by fans and blown out through the warp, numerous perforated hot-air pipes are now used to blow air on the warp, particularly at the feed end and where the yarn passes from one skeleton cylinder to another. It is stated that this arrangement eliminates the danger of marking the warp.

The tension arrangement at the feed end has also been improved. Stretch can be controlled between the feed rolls and the size box, and between the size box and the beaming head. Another change that has been made in the new model is that the beam is now placed higher and further from the dryer.

## *Inter-Office 'Phone*

• Private inter-office communication for the small business is the field of Philco-Phone, the new product introduced by Philco Radio & Television Corp., 3701 N. Broad St., Philadelphia. The Philco-Phone is built to serve as many as four remote stations connected with the master control unit and will operate over a distance of ¼ mi. While the system draws its energy

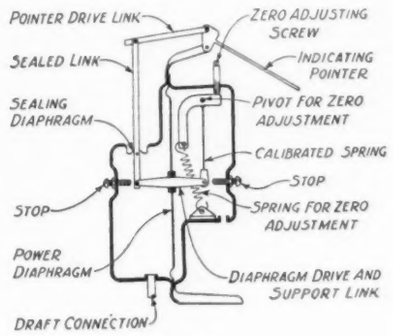
'PHONE

from the a-c. or d-c. electric socket or outlet, the voice transmission is confined to the wires of the system itself, thereby assuring privacy.

The system is a simplified voice transmitter and amplifier. The master control unit measures 10½ in. long, 8¾ in. high and 5⅝ in. deep, or sufficiently small to set on the ordinary desk without usurping valuable space. The remote stations measure 6¾ in. high, 6⅞ in. wide and 3¾ in. deep. Sufficient amplification is provided to enable a person to listen or speak in the normal voice even when the cabinet is placed room-length away.

## *Multi-Pointer Gage*

Diaphragm material which is resistant to oil, acid, caustic, and heat, and which also possesses flexibility and strength, is featured by Bailey Meter Co., Cleveland, O., in a new diaphragm-operated multi-pointed gage for boiler-room service. The unit consists essentially of a flat calibrated spring, a sealed link, and a power dia-




GAGE

phragm. The weight of the diaphragm is carried on a second link pivoted at one end on the calibrated spring and at the other end on the sealed link.

Draft is applied on the left side of the diaphragm, which causes movement of the system to the left. This movement is opposed by the calibrated spring. The motion is transmitted by the sealed link to the outside of the diaphragm unit, where a drive link carries the motion to the indicating pointer.

For indication of pressure, the connection is made on the opposite side of the diaphragm. For indication of differential pressure, the connections are made to both sides of the diaphragm.

## *Self-Operating Controllers*

• C. J. Tagliabue Mfg. Co., Park and Nostrand Aves., Brooklyn, N. Y., announces improvements in its line of self-operating temperature controllers. The improvements include a new design of flexible seamless metal bellows and numerous minor refinements of design, material, and workmanship. The new model is suitable for industrial applications where the close control obtainable with auxiliary power is not necessary, or where the steam pressure available is less than 10 lb. per square inch. Temperature ranges are approximately 75° between the limits of 30 and 450° F. The values are semi-balanced, in sizes from ½ to 2 in.

# *NEW DYES & CHEMICALS*

## *Acetate Dye*

• E. I. du Pont de Nemours & Co. has announced the following new product: Celanthrene Pure Blue BRR, a new acetate dye of the same strength and fastness properties as Celanthrene Pure Blue BR, but yielding noticeably redder shades. This dye is said to be particularly suitable as a base for navy shades.

## *General Dyes*

• General Dyestuff Corp. announces the following new products:

Fastusol Violet LFFR, a homogeneous direct dye giving clear and bright violet shades of very good fastness to light; and a fastness to water, alkali, and brightening remarkable in a direct dye; fastness to water can be improved by aftertreatment with Solidogen B, although this causes a slight decrease of the fastness to light. Very good tone-in-tone dyeings are obtained on mixed fabrics of cotton and viscose.

Fastusol Blue LF3GL, a homogeneous direct dye yielding greenish blue shades of very high fastness to light; good fastness to acid, printing, and rubbing, and comparatively good fastness to water, washing, perspiration, and hot pressing; fastness to

water can be improved by aftertreatment with Solidogen B, although this causes a slight decrease of the fastness to light. Very good tone-in-tone dyeings are obtained with Fastusol Blue LF3GL on mixed fabrics of viscose and cotton.

Brilliant Benzo Violet BA, a direct dye yielding very bright dischargeable shades of violet of moderate fastness to light and washing on cotton, rayon, and silk.

Alizarine Supra Sky SE, a homogeneous acid dye yielding a particularly clear blue shade of good fastness to light and washing.

Anthralan Orange GG, a homogeneous level-dyeing acid dye producing dischargeable, clear, yellowish orange shades of good to very good fastness to light; very good fastness to carbonizing and hot pressing; and good fastness to rubbing, alkali, stoving, and decatizing.

### *Non-Slip Finish*

• Announcement has been made recently of Slipnaught-A, a synthetic resin for application to rayon fabrics to impart non-fraying and non-slipping properties to the yarns. The finish is applied under U. S. Patent No. 2,050,156, granted to Hector C. Borghetly, and assigned to the Aspinook Co., Jewett City, Conn. This company will supply Slipnaught-A to other finishers. It is stated that this material does not affect the handle of fabrics to which it is applied. One outstanding advantage cited for the Slipnaught finish is that its application to a low-construction fabric results in a product which is equal to a non-treated fabric of higher construction. For example, a 110x56 rayon satin with the Slipnaught finish is said to be fully as good as an untreated 140x68 construction. It is asserted also that Slipnaught-A imparts desirable non-sag and non-stretch qualities when applied to spun rayon and wool fabrics.

### *Exhibits New Finishes*

• An exhibit of diversified chemical products developed by E. I. du Pont de Nemours & Co. is now on display in the New York Museum of Science & Industry, Rockefeller Center, New York. This exhibition, which opened on March 31, is intended to acquaint the public with the significance of recent developments in chemistry as applied to everyday life. It also demonstrates the way in which the chemical industry has influenced other industries. From the viewpoint of the textile manufacturer and finisher the following developments are of particular interest: (1) A new chemical which is said to render textiles highly flameproof and at the same time impart a soft, pleasing handle; (2) Applications of fatty alcohol sulphates in processing textiles; (3) Improved types of pyroxylin coated fabrics; (4) Demonstration of the uses of various classes of synthetic dyes, peroxide bleaching agents, water repellants, softeners, etc.; (5) Application of urea-formaldehyde type of synthetic resins to give crease-resistant finishes on cotton, rayon, and linen fabrics, and (6) new uses for rayon. On the opening night of the exhibit, a fashion review was held in which living models displayed dresses, hats, shoes, and accessories made in whole or in part from products of the chemical manufacturing industry.

# *NEW PUBLICATIONS*

**The World Textile Conference;** by Lewis L. Lorwin; National Peace Conference, New York; 75c.

Lewis L. Lorwin, economic adviser to the International Labor Office, who prepared the agenda for the April conference in Washington is the author of this publication. He presents the reasons for the World Textile Conference, the problems before it and its wider significance.

**Iban or Sea Dayak Fabrics and Their Patterns;** by Alfred C. Haddon and Laura E. Start; Cambridge University Press, England, and The Macmillan Co., New York; $8.75.

This work is a descriptive catalog of the Iban fabrics in the Museum of Archaeology and Ethnology, Cambridge. It is enhanced by an introduction giving the ethnological background and present status of the Ibans or Sea Dayaks, dark-skinned inhabitants of Borneo, who now occupy a large part of Sarawak. This is followed by an illustrated section devoted to the technique of the natives in making bark-cloth and cotton cloth, in preparing dyes and in fashioning jackets. Details of patterns are given and descriptions of the fabrics and garments in the Cambridge Museum. There is a vocabulary of Iban words appended, a bibliography and 35 plates. Mr. Haddon's study of these native fabrics dates back to 1898.

**More for Your Money,** by H. Bennett; Chemical Publishing Co., New York; $2.75.

This is the latest of an epidemic of books which aim to tell consumers how to get their money's worth when they go shopping. Textile manufacturers—and particularly those organized groups in the industry which develop standard specifications and test methods for textiles—will be interested in studying the chapters on cotton and linen goods, silks, silk stockings, artificial fibers, etc. In fact, this reviewer suggests that an organization like Committee D-13 of the American Society for Testing Materials undertake in a systematic way a study of the tests recommended to consumers, to determine if they really offer helpful guidance. The author, in his preface, invites "corrections and additions for future editions." This invitation should be accepted.

**British and Dominion Textile Industry** Excluding Lancashire and Yorkshire; 46th edition; John Worrall, Ltd., Oldham, England. 14/6.

This edition of Worrall's directory of British textile mills has been extensively revised and has been reset in a modern type face. In conjunction with the separate directions for Lancashire and Yorkshire, it constitutes a valuable reference book for those interested in the British textile industry.

**Clark's Directory of Southern Textile Mills,** Jan. 1, 1937 edition; Clark Publishing Co.

Vest-pocket directory of mills in southern States listed by States and towns and grouped alphabetically in index. Data given includes officers, equipment, purchasing agent, products, etc.

# *NEWS OF SUPPLIERS*

• **Willcox & Gibbs Sewing Machine Co.,** 658 Broadway, New York, has appointed Norman Wonnacott to the position of sales manager. Mr. Wonnacott has been with the company for nearly twenty years, the first four of which were spent in the Belfast, Ireland, office.

• **U S Bobbin & Shuttle Co.,** Lawrence, Mass., has made John A. D'Arcy superintendent of the shuttle department. Mr. D'Arcy was superintendent of **Shambow Shuttle Co.,** Woonsocket, R. I., for many years.

• **Albrecht Mfg. Co.,** Biddeford, Me., has been organized by George F. Albrecht and will distribute various mechanical devices made from oil-exuding bearing material. For the last thirteen years Mr. Albrecht served as chief draughtsman for **Saco-Lowell Shops,** Biddeford.

• **Onyx Oil & Chemical Co.,** Jersey City, N. J., has appointed Leon P. Brick as assistant general sales manager.

• **National Oil Products Co.,** Harrison, N. J., has transferred George M. Cunningham to the San Francisco, Cal., office.

• **B. F. Sturtevant Co.,** Hyde Park, Mass., has announced the creation of an Industrial Department which will act as a liaison between the company and industrials to promote the sale and application of all Sturtevant air-handling equipment. This department will work closely with consulting engineers, plant engineers, and production executives to insure correct design.

• **American Cyanamid & Chemical Corp.,** New York, has announced the acquisition of the business of **H. A. Metz & Co.,** Newark, N. J. The business of H. A. Metz & Co., will be consolidated with that of American Cyanamid & Chemical Corp. and will be operated in the latter name.

• **James Talcott, Inc.,** New York, has formed **James Talcott of Canada, Ltd.,** Montreal, Que.

• **United Clay Mines Corp.,** Trenton, N. J., has elected Kenneth A. Ward a director. Mr. Ward has served as advertising manager for the last seven years.

• **Herstein Laboratories, Inc.,** New York, is the revised name of **Kenny-Herstein, Inc.,** owing to the resignation of Frederick Kenny.

• **Lewellen Mfg. Co.,** Columbus, Ind., has announced the appointment of **Tidewater Supply Co.,** with headquarters at Norfolk, Va., and branch offices

at Roanoke, Va., Asheville, N. C., and Columbia, S. C., as distributors of Lewellen variable-speed transmissions for the States of Virginia, North Carolina, and South Carolina.

• **Foxboro Co.,** Foxboro, Mass., has moved its Atlanta, Ga., office to 101 Marietta St. Bldg.

• **Royce Chemical Co.,** Carlton Hill, N. J., has purchased from the receivers of Textiles, Inc., the land and buildings of the former Helen Yarn Mills at Rock Hill, S. C.

• **General Electric Co.,** Schenectady, N. Y., reports net income of $43,947,000 for 1936, a gain of 58% over 1935.

• **Link-Belt Co.,** Chicago, has appointed H. F. Brown to manage the sale of its electronic Radiostat control system.

• **J. M. Tull Metal & Supply Co.,** Atlanta, Ga., has added W. C. Ferguson and W. E. Jones to its organization.

• **E. F. Houghton & Co.,** Philadelphia, has appointed A. B. Baker as representative for South Carolina. Mr. Baker was formerly superintendent of Georgia Duck and Cordage Co., Scottdale, Ga.

• **Westinghouse Electric & Mfg. Co.,** East Pittsburgh, Pa., reports net income of $15,099,201 for 1936, as compared with $11,983,380 for 1935. The net income for 1935 included a nonrecurring item of $1,606,625, while in 1936 there was an extraordinary item of expense representing $1,875,960 flood damage.

• **Old Dominion Box Co., Inc.,** Lynchburg, Va., made the box designed by Cannon Mills which won the Bronze Award in the All-American Package Competition of 1936, sponsored by *Modern Packaging.*

• **Apex Chemical Co.** announces that Dr. Standford L. Hermann, son of the president of the company, and member of its research staff, recently went to the West Indies. While in Cuba, he interviewed chemical firms and consumers already doing business with his organization, with a view to establishing better Latin-American cooperation.

• **Bolt's Textile Devices, Inc.,** of Greenville, S. C., capitalized at $2,500, has been granted a charter to deal in textile devices and appliances. J. M. Bolt is president.

• **Cooling & Air Conditioning Corp.,** subsidiary of B. F. Sturtevant Co., has transferred A. B. Wason from the New York office to Greensboro, N. C., as district manager, covering Virginia, North and South Carolina, and eastern Tennessee. Mr. Wason has been with the corporation for 14 years. In his new post, he will cover sales, engineering and contracting installations for humidifying equipment, particularly in textile mills.

• **L. H. Gilmer Co.,** Philadelphia, honored John S. Kraus, president, with a testimonial dinner to mark the occasion of the 25th anniversary of his service with the company.

• **Pittsburgh Plate Glass Co.,** Barberton, O., has elected E. T. Asplundh, assistant to vice-president of Columbia Chemical Division, a director.

• **Westinghouse Electric & Mfg. Co.,** East Pittsburgh, Pa., has elected C. W. Pomeroy as secretary to fill the vacancy left by the death of Warren H. Jones.

• **Swan-Finch Oil Corp.** has moved its New York offices to 30 Rockefeller Plaza.

• **Rayon Machinery Corp.,** Cleveland, Ohio, a subsidiary of Industrial Rayon Corp., Cleveland, has leased space in building at 7275 Wentworth Ave., S.W., totaling about 35,000 sq.ft. floor space, and will occupy at once for plant for production of machinery for new rayon mill of parent company at Painesville, Ohio.

• **General Refractories Co.,** Philadelphia, announces the appointment of **H. W. Porter & Co., Inc.,** Newark, N. J., as distributor in the Newark area.

• **Bridges Mfg. Co.,** Salisbury, N. C., has received a charter to manufacture cotton-mill machinery and other mechanical devices under an authorized capitalization of $400,000.

# Textile World Analyst

**TEXTILE WORLD's index of textile mill activity** for the first two months of 1937 showed a rate of operations approximately 20% ahead of the same period in 1936, and 30% above the first two months of a "normal" year (1924-31 average). Although March statistics are not available at this writing, it is probable that at least this rate of increase was continued throughout the first quarter of this year. . . . Carded cotton fabric prices advanced during March, and margins at the end were above those at the end of February but the March average was below the February average. Carded yarn margins turned up in the last half of March, the average for the month being about the same as February. (Tables I and II). . . . The relatively slow rise in cotton fabric prices in the face of a sharp increase in raw cotton featured March, as reflected in TEXTILE WORLD's price indices. Raw cotton, for example, advanced five points while gray cloth moved up only two.

## *Textile World's Price Index Numbers*

STARTING with January, 1936, TEXTILE WORLD has revised its price index numbers to a 1923-25 base, to correspond with current statistical practices. Those who wish to continue with indices based on July 1, 1914, for chart purposes or otherwise, can secure conversion factors to change the new figures to the old by writing TEXTILE WORLD, Statistical Dept., 1427 Statler Bldg., Boston, Mass. Figures on cotton manufacturers, Aug. 1, 1933 to Jan. 6, 1936 include processing tax.

| | Cotton Index Numbers | | | | Wool Index Numbers | | | | Silk Index | Rayon |
|---|---|---|---|---|---|---|---|---|---|---|
| Date | Cotton | Yarns Gray | Yarns Colored | | Wool | Tops | Yarns | Cloth | Raw-Silk | Index |
| 1923-25 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1930 ave. | 50 | 61 | 61 | 72 | 58 | 61 | 72 | 90 | 109 | 46 |
| 1931 ave. | 32 | 68 | 46 | 59 | 46 | 49 | 59 | 71 | 32 | 32 |
| 1932 ave. | 24 | 37 | 37 | 60 | 36 | 40 | 52 | 57 | 21 | 28 |
| 1933 ave. | 39 | 56 | 55 | 50 | 53 | 59 | 62 | 80 | 21 | 26 |
| 1934 ave. | 61 | 67 | 70 | 62 | 63 | 70 | 75 | 91 | 17 | 25 |
| 1935 ave. | 60 | 68 | 67 | 69 | 56 | 58 | 70 | 88 | 22 | 24 |
| July 1935 | 61 | 68 | 65 | 69 | 56 | 59 | 70 | 89 | 20 | 23 |
| Aug. 1935 | 58 | 68 | 66 | 69 | 56 | 59 | 70 | 89 | 23 | 24 |
| Sept. 1935 | 55 | 66 | 68 | 69 | 58 | 60 | 70 | 89 | 25 | 24 |
| Oct. 1935 | 57 | 68 | 68 | 69 | 60 | 61 | 73 | 92 | 27 | 24 |
| Nov. 1935 | 60 | 70 | 69 | 72 | 62 | 65 | 75 | 92 | 27 | 24 |
| Dec. 1935 | 60 | 71 | 69 | 72 | 64 | 66 | 76 | 92 | 26 | 24 |
| Jan. 1936 | 48 | 67 | 63 | 68 | 67 | 73 | 75 | 93 | 26 | 24 |
| Feb. 1936 | 42 | 62 | 58 | 67 | 72 | 81 | 77 | 93 | 24 | 24 |
| Mar. 1936 | 42 | 61 | 57 | 66 | 73 | 81 | 77 | 93 | 23 | 24 |
| Apr. 1936 | 43 | 60 | 55 | 64 | 68 | 75 | 76 | 90 | 22 | 24 |
| May 1936 | 43 | 57 | 54 | 64 | 67 | 75 | 76 | 90 | 21 | 24 |
| June 1936 | 44 | 58 | 57 | 65 | 67 | 75 | 76 | 90 | 20 | 25 |
| July 1936 | 48 | 61 | 61 | 70 | 69 | 75 | 75 | 90 | 22 | 26 |
| Aug. 1936 | 45 | 62 | 63 | 70 | 70 | 75 | 74 | 90 | 23 | 26 |
| Sept. 1936 | 45 | 62 | 63 | 70 | 70 | 75 | 74 | 90 | 22 | 26 |
| Oct. 1936 | 45 | 64 | 67 | 71 | 71 | 75 | 74 | 92 | 23 | 26 |
| Nov. 1936 | 45 | 65 | 74 | 72 | 78 | 82 | 76 | 100 | 26 | 26 |
| Dec. 1936 | 48 | 72 | 80 | 74 | 87 | 90 | 84 | 105 | 26 | 26 |
| Jan. 1937 | 48 | 73 | 81 | 76 | 90 | 93 | 88 | 108 | 27 | 26 |
| Feb. 1937 | 48 | 74 | 78 | 76 | 90 | 93 | 90 | 108 | 27 | 26 |
| Mar. 1937 | 53 | 78 | 80 | 78 | 87 | 88 | 90 | 112 | 27 | 26 |

Fabric and yarn manufacturing margins follow:

TABLE I. CARDED FABRIC MARGIN

| Date | Margin in cents | Date | Margin in cents |
|---|---|---|---|
| August, 1933.. | 21.4 | November, 1935. | 16.4 |
| October, 1933.. | 19.1 | December, 1935. | 16.2 |
| January, 1934 | 18.4 | January, 1936.. | 17.2 |
| April, 1934... | 17.6 | February, 1936. | 16.5 |
| July, 1934.... | 15.5 | March, 1936... | 15.5 |
| August, 1934.. | 16.6 | April, 1936.... | 14.3 |
| September, 1934 | 18.6 | May, 1936..... | 14.3 |
| October, 1934.. | 17.4 | June, 1936..... | 15.3 |
| November, 1934. | 15.8 | July, 1936..... | 16.9 |
| December, 1934. | 16.2 | August, 1936.. | 18.0 |
| January, 1935.. | 16.2 | September, 1936 | 18.4 |
| February, 1935. | 16.0 | October, 1936.. | 21.2 |
| March, 1935... | 15.9 | November, 1936 | 25.4 |
| April, 1935.... | 16.1 | December, 1936. | 28.1 |
| May, 1935..... | 16.0 | January, 1937.. | 28.6 |
| June, 1935..... | 16.5 | February, 1937. | 26.2 |
| July, 1935.... | 15.2 | M... 1937 | 25.6 |
| August, 1935... | 17.1 | Mar. 10 .. | 24.9 |
| September, 1935 | 17.9 | Mar. 17 .. | 25.6 |
| October, 1935.. | 17.7 | Mar. 24 .. | 26.2 |
| | | Mar. 31 .. | 25.7 |

TABLE II. CARDED YARN MARGIN

| Date | Margin in cents | Date | Margin in cents |
|---|---|---|---|
| August, 1933... | 23.5 | November, 1935. | 16.3 |
| October, 1933.. | 20.0 | December, 1935. | 16.3 |
| January, 1934.. | 18.3 | January, 1936.. | 18.4 |
| April, 1934.... | 15.9 | February, 1936. | 17.5 |
| July, 1934..... | 14.7 | March, 1936... | 16.3 |
| August, 1934... | 15.3 | April, 1936.... | 15.6 |
| September, 1934 | 15.6 | May, 1936..... | 14.8 |
| October, 1934.. | 14.6 | June, 1936..... | 14.6 |
| November, 1934. | 13.5 | July, 1936..... | 15.0 |
| April, 1935.... | 14.1 | August, 1936.. | 16.5 |
| September, 1935 | 15.4 | September, 1936 | 16.5 |
| October, 1935.. | 15.8 | October, 1936.. | 17.2 |
| December, 1934. | 13.5 | November, 1936 | 18.0 |
| January, 1935.. | 13.5 | December, 1936. | 20.6 |
| February, 1935. | 13.9 | January, 1937.. | 20.8 |
| March, 1935... | 14.4 | February, 1937. | 21.2 |
| May, 1935..... | 13.8 | March, 1937... | 21.3 |
| June, 1935..... | 14.5 | Mar. 10 .. | 20.7 |
| July, 1935..... | 14.3 | Mar. 17 .. | 20.8 |
| August, 1935.. | 15.3 | Mar. 24 .. | 21.5 |
| | | Mar. 31 .. | 22.2 |

# The Personal Page

**J. P. T. Armstrong,** formerly vice-president of Belding Heminway Co., Putnam, Conn., has been elected president to succeed **R. C. Kramer,** who becomes chairman of the board of directors.

**J. A. Goodman,** chairman of the board of Real Silk Hosiery Mills, Inc., Indianapolis, Ind., and **L. L. Goodman,** treasurer, have resigned from the company they founded seventeen years ago.

**C. L. Chandler** has been elected president of the reorganized Dacotah Cotton Mills Co., Lexington, N. C., succeeding **C. A. Hunt, Jr.,** who has been president since the mill was organized 25 years ago. Mr. Hunt disposed of his interests in the company. **John McD. Moore** was elected secretary and treasurer to succeed **George W. Mountcastle,** resigned.

**L. G. Hardman, Jr.,** has been elected president of the Harmony Grove Mill, Commerce, Ga., succeeding his late father, Dr. L. G. Hardman. **J. B. Hardman** has been elected vice-president.

**Herbert K. Webb,** of Philadelphia, was elected president of the National Wool Trade Association by the directors immediately after the annual meeting at Boston, March 8. **C. Willard Bigelow,** of Boston, is secretary-treasurer; vice-presidents are **Durham Jones** of Boston, **L. A. Schreiner** of Kerrville, Tex., **Hubert S. Silberman** of Chicago, and **Lorin H. Tryon** of San Francisco.

**Paul Carter** has been appointed secretary-treasurer and manager of Lorraine Hosiery Mills, Sweetwater, Tenn.

**William Morrill,** agent for both the Gonic and Cocheco mills of Gonic (N. H.) Mfg. Co., was elected president of the concern at the annual stockholders' meeting. Other officers are: **Fulton Rindge,** treasurer; **Frank Splaine,** clerk.

**P. B. Baldwin,** general sales manager of Collins & Aikman Corp., Philadelphia, has been elected a director of the company.

**Walter M. Lamont,** agent, has completed his 30th year with the Wood Worsted Mill of American Woolen Co., Lawrence, Mass.

*Percy Howe, who has resigned as vice-president of Industrial Rayon Corp. and rejoined Suncook Mills as vice-president.*

**S. S. Short** is manager of the new Imperial Hosiery Mills, Mocksville, N. C., which recently began operations.

**William R. Hutz,** formerly director of United Piece Dye Works, Lodi, N. J., has joined the Sunbury Converting Works in an executive capacity.

**John Currie,** general manager of High Falls (N. C.) Mills, Inc., has been added to the list of directors.

**L. F. Hinkle** has been made general manager of Douglas Silk Products Co., Douglasville, Ga.

**E. Irving Hanson, Jr.,** has been elected assistant treasurer of Mallinson Fabrics Corp., New York.

**A. S. Jarrett,** assistant general manager of Gayle plant of Springs Cotton Mills, Chester, S. C., has resigned.

**G. E. Repass,** superintendent of Alabama Mills Co., Jasper, Ala., has resigned to become associated with H & B American Machine Co., Pawtucket, R. I.

**J. A. White** has resigned as superintendent of Cleveland Cloth Mills, Shelby, N. C.

**J. C. Pirkle,** formerly plant superintendent of Marlboro Cotton Mills, Bennettsville, S. C., has become superintendent of Durham (N. C.) Cotton Mfg. Co., to succeed **Harold A. Deal.**

**Raymond W. Jacoby,** superintendent of the finishing department of Farr Alpaca Co., Holyoke, Mass., has resigned. The department will operate under the direction of **George E. McCarthy** and **Joseph Metcalf, 2nd.**

**Davis Douglas,** who has been with the Tubize Chatillon Corp., Rome, Ga., has become southern representative for Brown Instrument Co., Philadelphia.

**I. N. Dunn,** formerly superintendent of Santee Mills, with units at Bamberg, S. C., and Orangeburg, S. C., is now South Carolina representative for American Asbestos Products Co., Cleveland, O.

**Harold E. Pearson** has been appointed superintendent of Palmetto Hosiery Mills, Laurens, S. C.

**Thomas Turner** of William Iselin & Co., Inc., New York, has been elected chairman of the Men's Furnishings Manufacturers Credit Group.

**L. R. Pittinger,** second hand in night carding at Boaz (Ala.) Mill & Gin Co., has been promoted to the position of superintendent.

**J. L. Rheinhardt,** superintendent of the Jennings Cotton Mill, Lumberton, N. C., has resigned.

**B. K. Sharpe** is now superintendent of Calhoun Mills, Calhoun Falls, S. C.

**Earl M. Hodel,** who has been superintendent of North Star Woolen Mill Co., Minneapolis, Minn., for the last twelve years, has become associated with Chatham Mfg. Co., Winston-Salem, N. C.

**Paul Eager,** sales promotion manager of the manufacturing division of Marshall Field & Co., has resigned, and has been succeeded by **Don Mitchell,** formerly assistant sales manager.

**B. Ellis Royal,** associate editor of *Textile Bulletin,* has been elected secretary of the Southern Textile Association to fill out the unexpired term of the late D. H. Hill, Jr.

**Harry W. Horstman** has been made credit manager of Commercial Factors, Inc., New York, succeeding the late Andrew W. Hamilton.

**Paul D. Brett,** San Francisco sales manager for Wamsutta Mills, has been elected president of Western Textile Representatives.

**T. Max Watson,** treasurer and manager of Sterling Hosiery Mills, Spindale, N. C., has been elected chairman of the new board of county commissioners of Spindale.

**Adrian L. Shuford, Jr.,** secretary of Conover (S. C.) Knitting Mills and operator of Adrian Knitting Mill, Newton, N. C., has been elected mayor of the city board of commissioners of Conover.

**S. L. Stacks,** superintendent of Jefferson (Ga.) Mills, has also become the superintendent of the company's mills at Crawford and Royston, Ga.

**H. B. Arundale** has returned to this country after spending the last four and one-half years installing and operating the first raw silk testing laboratory in England for G. H. Heath & Co., Ltd. Mr. Arundale was formerly with Cheney Bros., Julius Kayser & Co., and U. S. Testing Co

**Raymond J. Cupler** has been appointed sales manager of Cooper, Wells & Co., St. Joseph, Mich.

**Matt Thompson,** auditor for the University of North Carolina, Chapel Hill, for the last two years, has resigned to become auditor for Golden Belt Mfg. Co., Durham, N. C.

**George D. Simpkins, Jr.,** superintendent of Cherokee Spinning Co., Knoxville, Tenn., has resigned and will return to his former home in Shelby, N. C., where he will take charge of the rayon, wool and silk spinning and rayon throwing and twisting departments of Eton Mill Co.

**W. A. Hunt,** formerly superintendent of Meritas Mills., Columbus, Ga., has resigned to accept a similar position with Pickett Cotton Mills, High Point, N. C.

**H. C. Duncan,** of Chicago, has been appointed auditor in the general offices of Marshall Field & Co., Spray, N. C.

**Roscoe O. Roberts** has become superintendent of yarn manufacture at Lincoln Mills of Alabama, Huntsville, which has resumed operation. **Charles K. Dillingham** will be superintendent of weaving and finishing.

**W. E. Rambow,** formerly overseer of carding at Sibley Mfg. Co., Augusta, Ga. has been made superintendent of Enterprise Mfg. Co., succeeding **C. C.**

**Page** resigned. **C. J. Ashmore**, formerly superinendent of Rushton Cotton Mills, is now superintendent at Sibley.

**R. A. Dallugge,** has been made general manager of National Textile Mills, Monrovia, Calif., organized to operate the plant of Monrovia Cotton Mills, idle for several years. **Louis M. Saxon** is assistant manager of this plant and superintendent of Argonaut Cotton Mills, Inc., Los Angeles, Calif. **J. D. Long** is superintendent at Monrovia.

**J. L. Henniss,** in charge of knitting at Magnet Mills, Clinton, Tenn., is now in charge of manufacturing operations, succeeding **R. H. Gaddy,** superintendent, who became manager of the Baker-Moise Hosiery Mills, Dallas, Tex.

**Frank Campbell, A. C. Black,** and others of Maiden, N. C., will open a new knitting mill at Maiden. It will be located in the Campbell Bldg.

*Dr. C. T. Murchison*

*G. Edward Buxton*

*Fessenden S. Blanchard*

*Three of the five American members of the United States-Japanese Cotton-Textile Industries Joint Committee. Two others, L. W. Chamberlain and Paul Steintorf, are residents in Japan.*

## *Obituary*

**Richard A. Strong,** aged 74, chairman of the board of Strong, Hewat & Co., New York, died at his home there on April 6. Mr. Strong, first connected with Lowe, Harriman & Co., formed the present concern in 1898. He announced his retirement in 1924, but continued to keep in touch with the industry. He served several terms as president of the American Association of Woolen & Worsted Manufacturers, later merged with the National Association of Wool Manufacturers.

William M. Butler

**William M. Butler,** aged 76, receiver for Hoosac Mills Corp., Boston, which won the Supreme Court case invalidating the AAA, died at his home in Boston on March 29. Mr. Butler, who was a former United States Senator from Massachusetts, was also president of Quissett Mill, New Bedford, Mass., West End Thread Co., Millbury, Mass., and Butler, Prentice & Co., New York.

**David W. Jarvis,** aged 69, who was connected with the merchandising of the product of Amoskeag Mfg. Co. for over 50 years, died at his home in New York on March 30. Mr. Jarvis started with the old concern of Denney, Poor & Co., but soon joined Noyes, Marsher & Gerrish, then selling agents for Amoskeag. From there on he followed the Amoskeag account as it went to C. L. Bauscher & Co., to Jarvis, Loomis & Bauscher, direct, and finally to George A. Sloan & Co.

**Robert Lee Studley,** aged 65, senior partner in Studley & Emery, Boston, former president of the Boston Wool Trade Association, and first president of the National Wool Trade Association, died at his home in Wellesley, Mass., on March 30.

**Edward Lockett,** aged 69, president of Jefferson Woolen Mills, Knoxville, Tenn., died March 1.

**Kenneth Gant,** president of Neuse (N. C.) Mfg. Co., died March 25 at his home in Raleigh, N. C.

**Judge Thomas Witherspoon Harbin,** aged 74, founder of Echota Cotton Mills, Calhoun, Ga., died in Rome, Ga., on March 8.

**Robert Albert Julia,** aged 53, general superintendent of Deering-Milliken Co.'s woolen mills, died in Lewiston, Me., March 12.

**J. T. Nance, Sr.,** aged 63, superintendent of carding and spinning for all the plants of Cannon Mills Co., died in Charlotte, N. C., on Feb. 28. Mr. Nance was with the Cannon organization for 23 years.

**Victor G. Bloede,** president of Victor G. Bloede Co., Baltimore, Md., died March 27 in his 89th year. He was a pioneer in the development of aniline dyes in this country and was active in the chemical industry for nearly 70 years. His firm has lately concentrated on manufacture of adhesives and sizings.

**Norman Linnett,** director and general manager of Courtaulds (Canada), Ltd., died at his home in Cornwall, Ontario, March 29.

**J. W. Rimmer,** aged 52, manager of the Charlotte, N. C., office of H & B American Machine Co., Pawtucket, R. I., and widely known in southern textile circles, died March 19.

**Forrest Milton Williams,** aged 40, assistant to the president and general sales manager of Real Silk Hosiery Mills, Indianapolis, Ind., died recently in Chicago.

**James H. Morgan, Jr.,** retired mill executive, died recently at his home in Greenville, S. C. Mr. Morgan served as secretary of American Spinning Co., Greenville, S. C., until he retired some years ago.

**Alfred E. Lord,** aged 79, former superintendent of the Carter & Rogers woolen mill in Lebanon, N. H., died March 13. He was a native of Rochdale, England.

**John J. Rooney,** aged 80, formerly superintendent of Tremont & Suffolk Mills of Nashua Mfg. Co., Lowell, Mass., died in Nashua, N. H., Feb. 23.

**Ernest M. Ide,** aged 55, cost accountant for Hockanum Mills Co., Rockville, Conn., died March 11 in Boston.

**William Arthur Duke,** aged 68, assistant superintendent of Majestic Mfg. Co., Belmont, N. C., died March 21.

**Frank L. Buckman,** aged 63, who entered the employ of the Pittsfield (N. H.) Mills at the age of 11 and served 52 years under 47 different foremen and superintendents, is dead.

**J. M. Gazaway,** aged 35, overseer of carding, second shift, at Imperial Cotton Mill, Eatonton, Ga., died March 8.

## *Textile Calendar*

- **Knitting Arts Exhibition, Commercial Museum, Philadelphia, April 19 to 23, 1937.**
- National Association of Hosiery Manufacturers. Annual convention, Commercial Museum, Philadelphia, April 21, 1937.
- Underwear Institute. Commercial Museum. Annual convention, Philadelphia, April 22, 1937.
- North Carolina-Virginia division of Southern Textile Association, Leaksville, N. C., April 24, 1937.
- American Cotton Manufacturers Association annual convention. Mayflower Hotel, Washington, D. C., May 12 to 14, 1937.
- National Rayon Technical Conference, Wardman Park Hotel, Washington, D. C., May 14-15, 1937.
- Cotton Manufacturers Association of Georgia, annual meeting, Cloister Hotel, Sea Island, Ga., June 3 and 4, 1937.
- Southern Textile Association, Annual Meeting, Myrtle Beach, S. C., June 11 and 12, 1937.
- Sixteenth Exposition of Chemical Industries, Grand Central Palace, New York, Dec. 6 to 11, 1937.
- American Association of Textile Chemists and Colorists, annual meeting, Bellevue-Stratford Hotel, Philadelphia, Dec. 3 and 4, 1937.

# Cotton Digest

IN view of the activity in textile machinery sales last year, it will surprise many to learn that there was a further drop in number of spindles in place, due to continued scrapping of old equipment. According to W. Ray Bell, president of the Association of Cotton Textile Merchants of New York, spindles in place at the end of February, this year, totaled approximately 27,000,000, the lowest since 1907.

Encouraging as that information is, it cannot be accepted as a guarantee against over-production. Each year, as modernization goes on, a larger percentage of the equipment is of the improved type, capable of far greater production than the old. It is good to see the junk gradually disappear, and to witness the installation of modern machinery, but it is also necessary to watch the output of those machines, particularly when the inevitable slackening sets in.—*Editor.*

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**A.C.M.A. Program**—The program of the annual meeting of the American Cotton Manufacturers Association, at Washington, May 12 to 14, as announced April 3, follows: May 12—luncheon, board of governors, Mayfair Hotel. May 13—president's report, Donald L. Comer; secretary's report, W. M. McLaurine; addreses by E. A. O'Neal, president, American Farm Federation, U. S. Senator John Bankhead, Cason J. Callaway, reporting on recent mission to Japan, Marvin Jones, chairman, House Committee on Agriculture; Harry L. Hopkins, FERA head, will speak at banquet. May 14—Talk by C. S. Ching, director of Industrial and Public Relations for U. S. Rubber Products Co., committee reports, election of officers.

•

**"20-Cent Talk" Dangerous**—Predictions of 20c. cotton next fall by "Wall Street farmers" is dangerous to cotton farmers, declared Secretary of Agriculture Henry Wallace at a press conference last month. Talk of higher prices, he said, is likely to "suck farmers into producing a large crop this year," which probably would result in a break when growers move on the market next fall.

•

**Carded Yarn Group Discusses Future**—Carded-yarn manufacturers have closed the gap somewhat between prices they are receiving and those the weave mills are receiving, but there is yet much to be accomplished, it was announced recently following a meeting at Charlotte, N. C., of officers of the group and members of the State committees. It was pointed out that living costs have increased generally, and that cotton has advanced $10 a bale in the last three months. A membership of 95.4% of available carded-yarn spindles was reported by Owen Fitzsimons, acting secretary. Don P. Johnston, of Wake Forest, N. C., chairman, presided.

•

**Lull Follows Activity**—Stimulated by labor uncertainty and prospects of increased costs, cotton yarns advanced irregularly during March, sales being well above recent months. The same forces spurred demand for gray goods; about 100,000,000 yd. of print cloth was sold the first week; March sales generally exceeded production, averaging 250% for print cloth and 200% for sheeting. April, however, brought a slight reaction in raw cotton which served as a brake on yarn and goods activity.

•

**A.C.M.A. Directors Meet**—Decision to push efforts to secure a tariff on jute and jute products, and plans for the Washington convention were said to be the chief topics discussed at a meeting of the directors of the American Cotton Manufacturers Association held last month at Charlotte, N. C. J. H. Cheatham, of Griffin, Ga., chairman of the jute committee, presented a 100-page brief on jute and its relation to cotton. The brief, prepared by W. M. McLaurine, secretary of A.C.M.A., will be presented to Congressmen and Senators representing the southern States in Washington.

•

**Converters, Irked, Sanction Strike Clause**—Executives of the Textile Fabrics Association described as "quite unfortunate" that the amended casualty clause of the Standard Cotton Textile Sales Note was not presented them for consideration before being adopted by other associations, but accepted the clause "in a spirit of cooperation." The revised clause specifies "in event of a strike or lockout at the subject mill, buyer's right to cancel under the casualty clause of the Standard Cotton Textile Sales Note shall be run without the right to collect damages."

•

**Philippines Take More Jap Goods**—More goods arrived in the Philippine Islands from Japan during January than for any month since November, 1935, according to Department of Commerce figures. A total of 5,328,000 sq. meters cotton cloth entered the country.

•

**Russia Will Produce Rust Picker**—Just back from Russia, John Rust, one of the inventors of the Rust Bros. mechanical cotton picker, told interviewers that "there is no question that the U. S. S. R. will attempt to mechanize cotton production," and will undertake mass production of the mechanical cotton picker.

•

**Student Exposition**—The annual Students Textile Exposition of North Carolina State College will be held April 22, according to a recent announcement by Dr. Thomas Nelson, dean of the Textile School. The home economics departments of twelve North Carolina colleges are expected to cooperate by putting on a style show displaying costumes made from fabrics designed and woven by the textile students.

•

**Chicopee on Four Shifts**—Chicopee Mfg. Corp. of Ga., Gainesville, recently announced that four 36-hour shifts would replace the former 40-hr. week. The 40-hr. wage scale will be maintained. At the same time, the company announced that an extra wage premium would be paid all employees April 1.

•

**Key cotton prices** of April 1, with comparisons follow:

| | April 1, 1937 | March 1, 1937 | April 1, 1936 | April 1, 1935 |
|---|---|---|---|---|
| Spot Cotton, N. Y. | 15.17 | 13.50 | 11.56 | 11.30 |
| Ditto, high previous month | 15.25 | 13.34 | 11.72 | 12.42 |
| Ditto, low previous month | 13.50 | 12.95 | 11.20 | 10.30 |
| 10s hosiery cones | 33½ | 29½ | 23½ | 26½ |
| 10s/2 carded skeins | 33½ | 30 | 23½ | 26½ |
| 20s/2 carded peeler warps | 38½ | 34 | 26½ | 29½ |
| 60s/2 combed peeler warps | 69 | 64 | 53½ | 56 |
| 60s/2 mercerized cones | 79 | 76 | 68 | 70 |
| 37 in., 3-yd. drill | 11⅛ | 10½ | 8¼ | 9⅛ |
| 38½-in. 64x60s | 7⅞ | 7½ | 5⅜ | 6⅛ |
| 36-in. 4-yd. 56x60s | 9¼ | 8⅝ | 7 | 7¼ |
| Denim, 2.20s | 16 | 15½ | 13 | 13½ |

•

**Statistics** of particular interest to cotton manufacturers, showing February operations and the raw material situation:

| | Feb. | Jan. |
|---|---|---|
| Spindle activity (% capacity) | 144.8% | 134.5% |
| Spindle activity (millions spindle-hours) | 8,352 | 8,587 |
| Cotton consumed (bales) | 664,439 | 678,064 |
| Cotton exported (bales) | 462,517 | 538,280 |
| Cotton imported (bales) | 22,544 | 15,007 |

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## *Cotton*

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TEXTILE WORLD'S

# Wool Digest

FOR the second time in less than six months, the woolen and worsted industry has taken the initiative and raised wages. This form of offense is the very best defense against groups who are attacking the labor standards of the industry merely as a form of strategy in connection with their own plans. The great majority of employees in this division have prospered with the industry. If, as always, there is a small non-conformist minority, the attack should be aimed there, and not at the industry as a whole.—*Editor.*

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**Wool goods prices** advanced late in March following wage increases of about 10% by many of the large producers. Mills withdrew their lines in the middle of the month and gradually reinstated them after the wage announcement. Woolen suitings and overcoatings were advanced 5c. and worsted suitings were up 7½c. Since mills generally are booked ahead for three to four months they will pay the wage advance during that time out of their own pockets. Mills are not pressing for forward business. Buyers of men's wear have been forced to turn to jobbers for needed supplies. Demand for top-coatings, tropical worsteds and gabardines has been strong. The industry's business booked during March was estimated to total 45,000,000 to 50,000,000 linear yards.

•

**Women's wear mills** are preparing their lines for fall, which it is expected will show advances of 35 to 40c over opening spring levels, or 7½ to 10c above the levels at which last orders for spring were booked. The trade looks for early commitments and may book most of the season's business in the two weeks following the formal opening. Cloak and suit makers are now entering a most active period. Most retailers plan to continue promotions of spring wool apparel for at least a month after Easter, and expect that the bulk of the business in coats and suits will be done in April.

•

**New Promotion for Men's Wear:** Associated Wool Industries is releasing a new talking slide-film to assist stores in training sales personnel of their men's clothing departments. The film was made by AudiVision, Inc., in cooperation with Walter K. Porzer, general director of the wool group. It is entitled "Suitability Sells Suits," and promotes the idea of the "balanced wardrobe" for men as a means to increase sales of men's clothing. It shows a group of retail clothing salesmen working out the new idea in conference and in a trial on a customer. The five-suit wardrobe is to be substituted for one or two all-purpose suits. The five types are business suit, informal social wear, formal evening attire, holiday clothes and active sports wear. The promotion stresses two basic policies: (1) building of *desire*, rather than price appeal; (2) selling not only replacement, but additional units for man's wardrode as well.

•

**Wool Production:** Total production of wool in the United States in 1936 was estimated by the Bureau of Agricultural Economics to be 426,527,000 lb. of which 360,327,000 were shorn wool and 66,200,000 were pulled wool. This compares with a production of 430,663,000 in 1935 and 428,741,000 for the 5-year (1930–34) average. The estimated number of sheep shorn in 1936 was 45,663,000 compared with 45,497,000 in 1935. There was decrease of 1% in quantity of wool but increase of ½ of 1% in number of sheep.

•

**Congo Cloth,** manufactured by Brand & Oppenheimer as a men's and women's summer suiting, has been awarded the "Signet of Serviceability" carrying complete approval of the National Association of Dyers & Cleaners, Silver Spring, Md., which represents the dry-cleaning industry in the United States and Canada. This award is the first in the dry-cleaning industry's campaign to designate serviceable merchandise to the public. Christopher J. Wagner, New York, is conducting the campaign for the association.

•

**Wool Tops Steady:** Tops on the exchange rose during March on narrow trading but scant pressure to sell. Standard spots began the month at $1.18, went to $1.20 on March 12, $1.23 on March 19 and held that figure to the close of the month. They were at $1.24 on April 2 and $1.22 on April 7.

•

**Proposal** for fuller wool statistics is gaining supporters. It is pointed out that virgin wool consumption is no longer a full index of what is going into manufacture and that noils, reworks, cotton yarn and staple fiber should be included in the monthly consumption figures collected and issued by the Bureau of Foreign and Domestic Commerce.

•

**A Peaceful Meeting:** Stockholders of the American Woolen Co. assembled for their annual meeting March 23 at Springfield, Mass., held a relatively peaceful session compared with the stormy proxy battle waged at the last annual meeting. Joseph B. Ely, former governor of Massachusetts, Eliot Wadsworth of Boston and Ray Morris of New York were reelected directors. Also reelected without contest were Frank Connett, treasurer, and Robert H. Montgomery, clerk. Other executive officers are acted on at the annual meeting of directors this month. Numerous questions were asked from the floor but the brief answers appeared satisfactory and the session was a short one.

•

**Pre-Shrunk Wool Goods:** A graphic educational exhibit of the importance to the consumer of woolen or worsted fabrics pre-shrunk to uniform standards of consumer satisfaction was presented by Texurity Guild in Booth 8 at the 16th annual Women's National Exposition of Arts & Industries which opened at the Grand Central Palace, New York, on March 29. Facts regarding the Texurity Tag and its significance to customers at the point of sale were pictorially displayed. Morris Garfinkel is president of the Texurity Guild.

•

**Angora Wool Co., Inc.,** has established an office, grading rooms and warehouse at Lancaster, Ohio, for handling rabbit wool. A receiving station has also been established at Colborne, Ont., where Canadian shipments are concentrated for reshipment to Lancaster. The company is the exclusive grading and marketing agent for Angora Wool Growers Association.

•

**Key wool prices** of April 1 and a month ago, and the last two years:

| | Apr. 1, 1937 | Mar. 1, 1937 | Apr. 1, 1936 | Apr. 1, 1935 |
|---|---|---|---|---|
| Fine and fine med. territory | $1.03 | $1.05 | $0.85 | $0.62 |
| Ohio ⅜s | .47 | .52 | .41 | .26½ |
| Tops fine 64-66s | 1.28 | 1.32 | 1.12 | .86 |
| average ⅜s | 1.10 | 1.12 | 1.01 | .72 |
| high ⅜ | 1.02 | 1.05 | .94 | .59 |
| Noils, fine | .80 | .82 | .70 | .52 |
| ½ | .60 | .62 | .55 | .40 |
| 2-40s 60s wstd yarn | 1.83 | 1.85 | 1.60 | 1.28½ |
| 8020 serge | 2.20 | 2.20 | 1.95 | Not Quoted |

•

**Current statistics** on wool consumption and mill activity:

| | *Jan.* | *Feb.* |
|---|---|---|
| *Wool consumed clean equiv.* | (5 weeks) | (4 weeks) |
| Apparel wool, lb. | 28,815,000 | 25,720,000 |
| Carpet wool, lb. | 12,800,000 | 12,812,000 |
| *Machinery activity (40 hr. shift)* | | |
| Looms (50" and wider) | 121.7% | 126.0% |
| Carpet looms | 81.0% | 90.9% |
| Combs | 144.5% | 152.7% |
| Worsted spindles | 109.0% | 111.2% |
| Woolen spindles | 135.0% | 142.8% |

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## *Wool*

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TEXTILE WORLD'S

# Rayon & Silk Digest

ONCE again, in the current rise of viscose yarn prices, the rayon industry demonstrates the value of its inherent stability as a man-made fiber. With other raw materials advancing with more or less violent fluctuations, rayon moves conservatively up 1 to 4c. per pound. Economically, the increase is well justified: the result of a steady upward trend in costs, involving particularly wage advances and probable increase in pulp prices. Psychologically, the clear-cut manner in which prices were adjusted strengthens the industry's position and makes for confidence by giving consuming branches a sound basis on which to plan their fall lines.

*—Editor.*

**Du Pont Leads Price Advance**—Announcement March 31, by the Rayon Division of E. I. du Pont de Nemours & Co., of a 1 to 4c. advance of viscose rayon prices, effective at once, precipitated a trend which it was expected the industry would follow. Next day Acele Division of du Pont and Celanese Corp. both advanced acetate yarn prices, thus substantially maintaining the price relationship between processes. Up to April 8, the Viscose Co. had made no change in its lists. The advance raised 150-40 viscose and 150 denier acetate both to 63c.

•

**Staple Sales Set Record**—Sale of staple fiber in February set a record for the youngest member of the rayon family, according to market reports. Both cotton and worsted weavers were buying actively. During recent weeks there has been a perceptible increase in demand for staple from the worsted branch.

•

**Rayon Broadgoods Uneven**—February showing of rayon broad woven cloth had both a bright and a dark side. While movement from weavers to cutters showed an increase—February index stood 297 against 281 for January—demand for dress goods, etc., declined, due to poor distribution of finished goods and dresses. National Rayon Weavers Association index figures follow:

| 1934=100 | December 1936 | January 1937 | February 1937 |
|---|---|---|---|
| Taffetas, Twills, Linings and Other Staples.... | 307 | 281 | 297 |
| Dress Goods, Novelties, and Other Fancies.... | 110 | 111 | 109 |
| Total ..... | 178 | 170 | 175 |

•

**Twists for Crepe Hose**—A typographical error occurred in the printing of the article "Twists for Crepe Hose," page 86, March issue. The expression "simple-end twisting" in the last sentence of the second paragraph should have read "single-end twisting."

•

**Labor Developments** — Following news of a strike at Industrial Rayon Corp.'s plant at Covington, Va., came reports April 7 that the Textile Workers Organizing Committee was starting a unionization drive at the Viscose Co. plant at Roanoke, Va.

•

**Rayon Tires** — Announcement was made recently that United States Rubber Products, Inc., Detroit, Mich., is now commercially manufacturing heavy duty truck and bus tires, using rayon cords. As noted in our last issue Goodyear Tire & Rubber Co., Akron, O., is also offering heavy duty tires containing rayon cords.

•

**Silk's Big Rise**—Silk's jump in price from $1.82 March 1 to $2.02 March 24, brought the usual flood of speculations and conjectures in its wake. Among the many reasons attributed for the rise the one gaining most credence in the market is that prices reacted psychologically to enactment of the Japanese price stabilization act.

•

**Fabrics Between-Seasons**—With both the silk and rayon fabric branches experiencing their between-seasons lull, manufacturers took advantage of the quiet spell to crystallize plans for new lines. Rayon fabric price tone, which had softened somewhat, showed signs of new strength on rumors of early advance in yarn prices.

•

**Japan Stabilizes Silk Prices**—Discouragement of excessive speculation in raw silk is expected to be an ultimate result of the new Raw Silk Price Stabilization Act which was passed by the House of Peers in Japan March 23. No very quick benefits are looked for: the provisions of the act will be carried out through an association of various Japanese interests, and it is expected that formation of that organization will take several months. The act comprises 40 articles: its basic aims are to prevent any radical advance or decline of market quotations of raw silk and to help stabilize and develop the Japanese sericultural industry.

•

**Key silk prices** and statistics follow:

| Prices | Apr. 1, 1937 | Mar. 1, 1937 | Apr. 1, 1936 | Apr. 1, 1935 |
|---|---|---|---|---|
| Crack XX 13/15 white 78%.. | $1.99½ | $1.82 | $1.88 | $1.34 |
| Tram, 5thd Japan 85%..... | 2.81 | 2.83 | 2.50 | 2.20 |
| Tram Crack XX 78%..... | 2.62 | 2.57 | 2.37 | 1.95 |
| 60s-2, spun silk..... | 3.05 | 3.05 | 2.90 | 2.75 |

| Statistics | Imports | Approx. Deliveries | Stocks at Warehouses |
|---|---|---|---|
| March, 1937..... | 32,257 | 39,934 | 41,731 |
| Feb. 1937..... | 37,348 | 38,484 | 49,408 |
| Jan. 1937..... | 50,328 | 44,198 | 50,544 |

•

**Key rayon prices** and statistics follow:

| Prices | Apr. 1, 1937 | Mar. 1, 1937 | Apr. 1, 1936 | Apr. 1, 1935 |
|---|---|---|---|---|
| Viscose process | | | | |
| 75 denier (18–30 fils.)..... | $0.93 | $0.90 | $0.90 | $0.92 |
| 100 denier (40 fils.)..... | .82 | .79 | .79 | .80 |
| 150 denier (40 fils.)..... | .63 | .60 | .57 | .60 |
| Acetate process | | | | |
| 150 denier..... | .63 | .60 | .60 | .68½ |
| Cupra. process | | | | |
| 150 denier (112 fils.)..... | .65 | .65 | .65 | .70 |
| Rayon staple 1½, 3 and 5½ denier Viscose..... | .28 | .28 | Not quoted | Not quoted |

Indices of Deliveries *

| Month | March | Feb. | Jan. |
|---|---|---|---|
| In year 1937..... | 516 | 549 | 537 |
| In year 1936..... | 422 | 517 | 477 |

* Rayon Organon, exclusive of Acetate. Daily average 1923–25 = 100.

DENIER AND FILAMENT NUMBER AMERICAN COMMERCIAL RAYON YARNS

| DENIERS | 30 | 40 | 45 | 50 | 55 | 60 | 65 | 75 | 100 | 120 | 125 | 150 | 170 | 200 | 240 | 250 | 300 | 450 | 600 | 900 | QUALITIES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I. VISCOSE PROCESS: | | | | | | | | | | | | | | | | | | | | | |
| The Viscose Co. | | | | 14 | | | | 30 | 40 | | 36 | 24-40 | 30-75 | | | | 44-60 | 100 | 100 | 100 | Filenza & Chatkelle, 1-2 |
| | | | | 24 | | | | 45 | 60 | | | 60-100 | | | | | 200 | | | | Bright & Dolesco, 1-2 |
| Du Pont Rayon Co. | | | | 20 | | | 26 | 30 | 20-40 | | 34 | 24-40 | 55 | | | | 50 | 72 | 96 | 144 | |
| | | | | | | | | 45 | 60 | | 50 | 60-90 | 80 | | | | 80 | 270 | | | Bright, Semi-Dull & Dull, 1-2 |
| | | | | | | | | | 100 | | | 150 | 120 | | | | 180 | | | | Dul-Luxe, Spun Lo & Premier 1-2 |
| Industrial Rayon Corp. | 8 | | | 14 | | | | 20 | 28-40 | | 34 | 40-60 | 40-80 | | 60 | | 44-60 | 60 | | | |
| American Enka Corp. | | | | 18 | | | | 30 | 40 | | 40 | 60-80 | 60 | | | | | | | | Bright, Ferlglo & Englo, 1-2 |
| | | | | | | | | 45 | 60 | | | 90 | 80 | | | | 60 | | | | |
| No. American Rayon Corp. | | | | | | | | | 40-60 | | 42 | 62-60 | 75 | | 72 | | 46 | | | | Bright, Semi-Dull & Xtra Dull, 1-2 |
| | | | | | | | 60 | 30 | 80-100 | | | 100-150 | | | | | | | | | |
| The Hartford Rayon Corp. | | | | | | | | | | | | 24-40 | 40-80 | | | | 44 | 66 | 66 | 126 | Bright & Dull, 1-2 |
| Acme Rayon Co. | | | | | | | | | | | | 44 | | | | | 44 | | | | Bright, 1-2 |
| Delaware Rayon Corp. | | | | | | | | | 44 | | 44 | 24-44 | 44 | 30-60 | | 44 | 44 | 60 | 88 | | Bright, Delustra & Dull, 1-2 |
| | | | | | | | | | 60 | | | 60-90 | | 90 | | | 60 | | | | Left & Right Twist |
| Shenandoah Rayon Corp. | | | | | | | | | | | | 40-60 | | | | | | | | | Bright, Dull & Veri-Dull 1-2 |
| New Bedford Rayon Co. | | | | | | | | | 40 | | 40 | 40 | | 60 | | | | | | | Bright & Newbow, 1-2 |
| | | | | | | | | | 60 | | | 60-90 | | 90 | | | 72 | | | | Left & Right Twist |
| Tubize Chatillon Corp. | | | | 18 | | | | | 40 | | 40 | 40 | | 40 | | | 44 | | | | Bright & Chardonize, 1-2 |
| II. ACETATE PROCESS: | | | | | | | | | | | | | | | | | | | | | |
| The Viscose Co. | | | | 14 | | 14 | 16 | 20 | 28 | 28-40 | 32-40 | | 46 | | 60 | | | 92 | 132 | 180 | Sevacete, Bright & Dull |
| Celanese Corp. of America | | | | 13 | | 13 | | 20 | 20 | 26-40 | 40 | | 40-60 | 40 | 52 | | | 80 | | | Celanese, Bright & Dull |
| Du Pont Rayon Co. | | | | 13 | | | 18 | | 24 | 32-40 | 32-40 | | 50-60 | | 64 | | | 100 | | | Acele, Bright & Dull |
| Tennessee-Eastman Corp. | | | 11-15 | | 14-20 | | 16-20 | 19-26 | 25-34 | 30-40 | | | 38-52 | | 50-68 | 60-80 | | 75-104 | | | Eastman, Bright & Dull |
| Tubize Chatillon Corp. | | | | | | | | | | | 40 | | | | | | | | | | Tubize, Bright & Dull |
| III. CUPRA-AMM. PROCESS: | | | | | | | | | | | | | | | | | | | | | |
| American Bemberg Corp. | 24 | 30 | | 36 | | | 45 | 60 | 75 | 90 | | 112 | | 135 | | 150 | 224 | | | | Bright & Matteo, 1-2 |
| | | | | 72 | | | | 101 | 135 | | | 224 | | | | | | | | | |

Revised February, 1937

COX & FULLER
Consulting Textile Specialists

320 Broadway
New York, N. Y.

**Rayon & Silk**

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TEXTILE WORLD'S

# Knit Goods Digest

LAST call for Philadelphia! No member of the knitting industry who wants to keep abreast of modern developments will dare to stay away! First drawing-card is the largest and most varied display of money-saving equipment ever held. Second is the program of meetings which will offer both the hosiery and underwear groups an opportunity to further crystallize their 1937 policies on such vital issues as labor policies, Federal legislation, and trade practices. The combination of these two attractions is hard to beat.—*Editor.*

**Hosiery Continues Strong**—February hosiery shipments, totaling 11,473,837 doz. pr., were 32.5% above those of February 1936, according to current statistics of the National Association of Hosiery Manufacturers. This substantial gain was equally spread through most major branches.

•

**Hosiery Standards Campaign On**—With promises of full cooperation from the National Retail Dry Goods Association and the Wholesale Dry Goods Institute, the campaign of the National Hosiery Manufacturers Association to win trade acceptance of the new construction and inspection standards for women's full-fashioned hosiery, got off to a good start this month. Steps now are being taken to secure support of all leading consumers' organizations. Harold Brightman, of NRDGA's merchandise standards committee terms program "a forward step to supply consumer with more dependable merchandise."

*THE QUICK RISE to popularity of zipper-front bathing-trunks, a new departure in knitted swimsuits, has proved one of the season's big surprises in outerwear. Introduced by Jantzen Knitting Mills last fall, this number has risen in a few months to second place in sales in the Jantzen line. Market observers now talk of zipper-front trunks as likely to prove a standard line in men's swimming apparel by the summer of 1938. The chief advantage claimed for these trunks is that they are much easier to put on, wet or dry, than the usual type of close-front knitted trunks. The innovation, on which patents are pending, has been well received in California and Palm Beach, and heavy summer business has been booked.*

•

**Broadcasts Used in Reading Strike**—Radio entered the Reading, Pa. hosiery strike last month as a propaganda method. L. D. Adams, American Federation of Hosiery Workers leader gave a broadcast presenting the workers' side and this was followed promptly with an answering broadcast by Harry Lee, attorney for certain manufacturers who challenged the accuracy of Adam's statements and presented the manufacturers' side.

•

**Mills Offer Agreement**—An agreement, proposed as a basis of settlement of the protracted strike against 17 hosiery mills in the Reading, Pa. area was submitted to the American Federation of Hosiery Workers by the Full-Fashioned Hosiery Association early this month. The agreement would be binding on more than 80 members of the manufacturers' body, located in various parts of the country. Among other things the pact guarantees maintenance of present hours and wages and union recognition; it would be effective until July 1, 1938.

•

**Uphold Underwear Minimums**—Southern States Industrial Council has recommended to the Public Contracts Board of the Federal Trade Commission that present existing wage minimums in the knitted underwear industry be made applicable to contracts under terms of the Walsh-Healy Act.

•

**Correction**—In our last issue, it was stated that, following recommendations made by the National Association of Hosiery Manufacturers, the Mercerizers Association had started a study of the breaking strength and stretch of mercerized cotton yarns. It was further stated that the study was being made by the Mercerizers Association's research staff at the National Bureau of Standards. This item was incorrect in that the study is being undertaken by the research staff of the National Association of Hosiery Manufacturers at the Bureau of Standards as a continuation of the breaking strength and stretch of mercerized yarn study of 2½ years ago. In this work, the hosiery group has requested the cooperation of the Mercerizers Association.

•

**Rosedale-Union Accord**—Announcement March 25 that Rosedale Knitting Co., Reading, Pa., had signed a labor contract with the American Federation of Hosiery Workers terminated a suit filed by 168 "sit-down" strikers in which action they sought legal vindication of their physical occupation of mill property. The 18-clause agreement was interpreted as favorable to the Rosedale company.

**Plan to Honor Palfreyman**—Plans were being formed this month by the National Association of Hosiery Manufacturers for a function to honor A. J. Palfreyman, chairman of the National Federation of Hosiery Manufacturers' Associations of Great Britain, who arrived here recently to attend the current World Texitle Conference at Washington, April 2.

•

**Underwear Buying Slackens**—End-March brought a slight let-up in underwear commitments after a rather poor heavyweight season due to unseasonably mild weather. However, mills still have substantial spot and future business booked. Uncertainty as to labor outlook was the only dubious element in the April outlook.

•

**New Outerwear Group Formed**—Outerwear manufacturers representing 17 mills doing 80% of the infants' and children's knitwear business of the country have formed a division of the National Knitted Outerwear Association; the division is headed by David H. Israel, of Regal Knitting Mills as chairman. The aim of the group, which will be a self-governing unit, is to effect "a more wholesome relationship between retailer and producer."

•

**Staple Sweaters and Polos Gain**—Curent outerwear market reports showed that (a) staple sweaters are surprisingly strong in advance fall buying and that (b) polo shirt volume in 1937 is likely to set a record, numerous large mills having already sold their entire polo output for this year.

•

**A Tax Saving Tip!**—Pointing out that "tax saving can result if machinery is abandoned instead of sold," the National Association of Hosiery Manufacturers draws attention in a memorandum to various questions dealing with allowed income tax deductions for losses taken on the sale of machinery. The Association announces that, while the memorandum was prepared for an individual member, copies are available to any other interested members on request.

## *Knit Goods*

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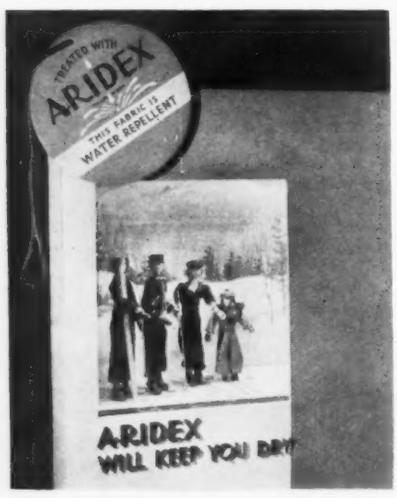
# Processing Digest

LAST year the consumption of rayon staple in this country was over 25,000,000 lb., a gain of 300% over the previous year. Naturally, then, more and more finishers are called upon to process fabrics made from this fiber.

On page 120 of this issue is an article discussing the use of synthetic resins to produce a wool-like finish on spun-rayon piece goods. This, we believe, is the first article to be published describing in any detail the actual mill methods employed for producing this particular type of finish. We commend it to our subscribers in finishing plants and suggest that they read and preserve every scrap of information they come across on these two major developments: synthetic resins and rayon staple.—*Editor.*

**Textile Drying**—Drying of textiles is to be studied at the National Bureau of Standards, Washington, D. C., under the auspices of the United States Institute for Textile Research and the supervision of the following committee: G. E. Hopkins, Bigelow-Sanford Carpet Co.; Dr. A. C. Walker, Bell Telephone Laboratories; and Dr. F. Bonnet, Viscose Co. This committee, together with representatives of the Bureau of Standards, will select a director for the research. The purposes of this study are to ascertain some of the fundamental facts underlying the design of drying equipment for textiles and to develop information as to the way in which textiles can be dried with maximum efficiency and with minimum injury to the material. The research was made possible by 50 co-operators, who have contributed $100 each. These co-operators, and others who may subsequently become contributing members of the U. S. Institute for this study, will receive confidential progress reports of results and will have sole access to these results until a year after the completion of the study. Likewise, they may have the services of the director on a consulting basis, the latter visiting their mills and conferring with their technicians when deemed requisite.




*Display cabinet with mannequins wearing ski costumes in an electrically controlled rain shower dramatizes the advantages of winter sport fabrics treated with Aridex, a water-repellent finish made by the Fine Chemicals Division of E. I. du Pont de Nemours & Co. The cabinet which is offered by I. A. Wyner & Co., New York, manufacturers of textiles processed by this treatment, shows the figures through a glass pane, with a painted winter scene in the background.*

•

**Printers Retain Gen. Johnson**—Announcement that Gen. Hugh S. Johnson, former NRA head, had been retained to conduct a survey of the textile printing industry, was made April 5 by Samuel Neslin, of Paterson, N. J., president, Textile Printers' Guild. Assisting Gen. Johnson will be a staff headed by Leon Henderson, economist. The study will cover production and marketing.

•

**Merchandising the Finish**—Recent developments in the program inaugurated by United States Finishing Co. to promote special finishes applied by that company are the appointment of Miss Kathryn Day as promotional director and the featuring in newspaper advertising by department stores of the Vitalized crease-resistant finish on linen garments.

•

**Shorter Work Week**—Job dyers and finishers of silk hosiery in New York, New Jersey, and Philadelphia, operating as the American Hosiery Dyers & Finishing Association, have made an agreement with the American Federation of Hosiery Workers to operate on the basis of a 40-hr., 5-day week under union wage rates. As a result of this agreement, which became effective April 5, it is expected that finishing costs will be increased by approximately 20%.

•

**Consumer Problems** were discussed by Ephraim Freedman, of R. H. Macy & Co., at the March meeting of the New York Section, American Association of Textile Chemists & Colorists, held March 19, at the Chemists Club, New York.

•

**Tin-Weighting Prices** were increased 1c. per yd. last month following recent advances in the price of tin. While tin-weighting is less important than it was a few years ago, considerable amounts of silk fabrics are still being weighted, particularly the 50x64 and 55x72 crepes and the 95x80 French crepes.

•

**Silk Finishers**—Alexander Patterson, executive secretary of the Dyers & Finishers Association of America, announced last month that a committee of four had been appointed to draw up a fair-trade practice pact for the silk and rayon finishing industry and to take this proposal to Washington. The objective of the association is to obtain stabilization of trade practices in the silk and rayon dyeing and finishing industry through national regulation of wages and hours of labor. One of the points sought is the licensing of firms to insure adherence to any trade-practice rules which may be adopted.

•

**Cellulose Chemistry**—Papers on the growth and structure of the cotton fiber, on X-ray studies of cellulose fibers, and on water-soluble cellulose ethers are among those being presented before the Division of Cellulose Chemistry, at the 93rd meeting of the American Chemical Society, Chapel Hill, N. C., April 12 to 15.

•

**Print Processing Corp.** recently has been organized in Paterson, N. J., in an effort to bring together the dyers who do discharge work for printers. This is a subsidiary of the Dyers & Finishers Association of America.

•

**Spring Meeting** of the Piedmont Section A.A.T.T.C. will be held at the King Cotton Hotel, Greensboro, N. C., April 17. A meeting of the council of the association will be held there on the morning of the same day.

•

**Advice to Converters** in reference to protection against lawsuits by employees, protection against unfair claims, and registering of chiselers was contained in a bulletin sent last month by Edmund Wright, executive directory, to members of the Textile Converters Association of America, Inc.

## *Processing*

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TEXTILE WORLD'S

# Engineering Digest

EVEN a casual study of the news items on current modernization programs in textile mills will reveal that more than the usual percentage of such work of late has been along what might be called general engineering lines—such as modernization of power plants, water-filtration systems, air-conditioning equipment, etc. This trend definitely indicates that manufacturers are becoming increasingly aware of the substantial savings possible in these directions. It is a fertile field, and well worth cultivation.—*Editor.*

**Regulators and Controllers**—The following letter in reference to an article on regulators and controllers, which appeared recently in TEXTILE WORLD, was written by Ed. S. Smith, Jr., chairman, S-C Instruments and Regulators, Process Industries Division, American Society of Mechanical Engineers: "In your February issue, pp. 81–4, is an excellent statement of the terminology used in one branch of industry interested in controllers and regulators. Your readers should also be interested in a paper by the writer on 'Automatic Regulators,' *ASME Transactions,* May, 1936, and its discussion and closure in the February, 1937, *ASME Transactions,* which sets forth a generally similar terminology. In the discussion of my paper, in which I used 'sensitivity' much as Mr. Hammond has, it developed that a considerable section of industry prefers to define 'sensitivity' as the change of response per unit change of the variable being controlled. In view of this, I personally am agreeable to the acceptance of the above definition of 'sensitivity' and the use of 'dead zone' in lieu of 'insensitivity.' The Process Industries Division of the ASME, a subcommittee on industrial instruments and regulators, is actively interested in the terminology of its field and so would welcome comments from your readers on this subject. Such comments should be sent to the secretary of this group, Albert F. Spitzglass, V.P., Republic Flow Meters Co., Chicago, Ill."

•

**Footcandles Plus**—Solution of a difficult lighting problem at Davenport Hosiery Mills, Chattanooga, Tenn., is described in a recent issue of General Electric Co's *Magazine of Light.* The area to be lighted was occupied by the inspection department, and the nature of the work made it necessary to have an ample amount of diffused illumination with a minimum of glare. The equipment finally selected was Ivanhoe Glassteel units. There were 40 units used, each equipped with one 500-watt Mazda lamp and one 250-watt high-intensity mercury-vapor lamp, or a total of 750 watts per unit. Spacing is 9x12 ft. and mounting height is 11 ft. from the floor. The illumination, measured after the installation had been operated four months, was 65 footcandles.

•

**Southeastern Electrical Industry Conference**—More than 300 members of the electrical industry heard Earl Whitehorne, editor of *Electrical Contracting,* bring to a close a successful movement to organize the various electrical interests for the benefit of industry. The viewpoints of the manufacturers, utilities, wholesalers, contractors, etc., were presented by nationally known speakers. This was the first of ten conferences which will be held at intervals throughout the country, according to R. M. Walker, general manager of Walker Electrical Co., who was one of the organizers of the movement.

•

**Down in Carolina**—The first meeting of the Western Carolina Safety Council was held at Anderson, S. C., Jan. 28. Approximately 300 delegates representing the textile plants in this territory gathered, and made definite progress along the line of accident prevention in the cotton mills of the state. The organization was formed last year and is being sponsored by the South Carolina Industrial Commission. Addresses by C. H. Strickland, superintendent of Appleton Co., Anderson, S. C., and A. J. Murphy, of Judson Mills, Greenville, S. C., featured the meeting.

•

**Modernization**—Some time ago the management of Woodside Cotton Mills Co., Greenville, S. C., under leadership of S. Marshall Beattie, president, decided to undertake a systematic program of modernization. Two of the high spots in the program were the rehabilitation of the picker room, and replacement of old drawing with modern long-draft system. Saco-Lowell equipment was used in both rooms. The accompanying illustration indicates the pleasing appearance of the drawing room.

**Controlled Atmosphere**—The Fifth International Heating & Ventilating Exposition was held in New York recently. Since its inception in 1930, the exposition has been held every two years, twice in New York; once each in Chicago, Philadelphia, and Cleveland. Interest in this meeting continues to grow, since in every section of the United States atmospheric conditions in the home, office, and mill are recognized as becoming more important each year.

•

**A.S.M.E.**—An interesting and varied program was provided members of the American Society of Mechanical Engineers attending a meeting held April 7, in Greenville, S. C., at the Poinsett Hotel. Feature addresses were by J. E. Sirrine, president of J. E. Sirrine & Co., Jno. A. McPherson, vice-chairman of the Greenville Section A.S.M.E. and chief engineer of J. E. Sirrine & Co., Asa Hosmer, southern field manager of Factory Insurance Association, E. M. Cushman of Judson Mills, and Dr. Charles H. Herty, former president of American Chemical Society. During the afternoon a visit was made to the Southern Textile Exposition and later the meeting concluded with a dinner, E. W. O'Brien, editor, *Southern Power Journal,* acting as toastmaster. (Details in next issue of TEXTILE WORLD).

## *Engineering*

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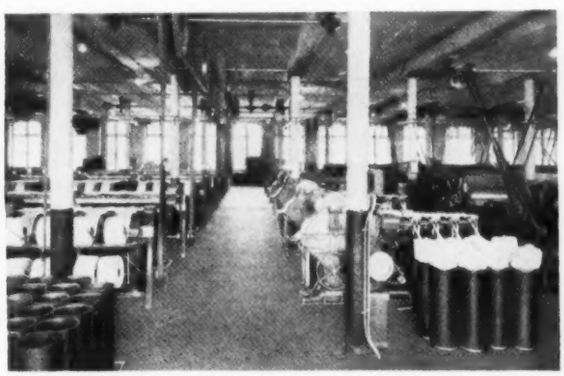

*Modern Equipment—Controlled-Draft Drawing Room of Woodside Cotton Mills Co., Greenville, S. C. Courtesy of Saco-Lowell Shops.*

# Mill News

## *Cotton Mill News*

**Cowikee Mills,** Eufaula, Ala., are installing 65 additional looms in the basement of the new dyeing division, which will bring the company's total to 461 looms.

**Goodyear T. & R. Co.,** Gadsden, Ala., unit has underway a 100 x 100 ft. addition to warehouse No. 3.

**Cowikee Cotton Mills,** Ozark, Ala., are completing expansion and modernization program at local mill, providing for large increase in capacity.

**Avondale Mills,** Mary Ann plant at Stevenson, Ala., has installed two Saco-Lowell twisters and one Foster winder. Avondale's LaFayette, Ala., plant has installed four new Saco-Lowell spinning frames and one new 102 spindle Foster winder.

**Canton** (Ga.) **Cotton Mills** recently installed 214 mercury vapor lamps furnished by General Electric Vapor Lamp Co., Hoboken, N. J. **Dwight Mfg. Co.,** Alabama City, Ala., also installed 143 similar lamps in its new slasher building.

**Imperial Cotton Mills,** Eatonton, Ga., have installed a new Lane conditioning machine.

**Georgia-Kincaid Mill,** No. 2, Griffin, Ga., are installing a new heating system manufactured by the Buffalo Forge Co.

**Juliette** (Ga.) **Milling Co.** is constructing a modern waterworks system, costing several thousand dollars, to furnish water for its employees.

**Callaway Mills,** La Grange, Ga., have begun erection of one-story addition, 75 x 132 ft., for expansion in slasher division. It is estimated to cost about $80,000.

**J. W. Sanders Cotton Mill, Inc.,** Jackson, Miss., has plans for additions to branch mills at Magnolia and Meridian, Miss., two-story, 26 x 150 ft., and three-story, 45 x 103 ft. Cost estimated over $100,000, with equipment. Robert & Co., Atlanta, Ga., are architects and engineers.

**Columbia Mills, Inc.,** Minetto, N. Y., have asked bids in general contract for two new additions to local mill, three-story, 80 x 245 ft., and one-story, 45 x 175 ft., to be equipped for large increase in capacity. Cost over $200,000, with machinery.

**J. & J. Cash Inc.,** Norwalk, Conn., label weavers, has awarded general contract to Hewlett Construction Co., Bridgeport, for a brick and steel addition, 51 x 75 ft., to cost $20,000.

**Standard Tytape Co.,** Asheboro, N. C., has completed the construction of an addition, and is now installing additional machinery.

**French Broad Cotton Mills,** Asheville, N. C., have work under way on installation of looms and auxiliary equipment in new local mill.

**Central Falls** (N. C.) **Mfg. Co.** is building an addition of about 10,000 sq. ft. to provide warehouse space.

**A. A. Shuford Mill Co.,** Hickory, N. C., has replaced old spinning equipment with 24 new spinning frames.

**Jackson Mill, No. 3,** High Shoals, N. C., has constructed a 500 hp. hydro-electric plant. It has also installed new air filters and exhaust systems, this work being done by Textile Shop, Spartanburg, S. C.

**Eno Cotton Mills,** Hillsboro, N. C., is having its machinery overhauled by Dixie Spindle & Flyer Co.

**Cannon Mills Co,** Kannapolis, N. C., is constructing an addition to the weaving department on the Concord-Salisbury Highway at Kannapolis.

**City Cotton Mill,** Newton, N. C., has begun the construction of an addition, two stories, in which additional machinery will be installed.

**Kendall Co.,** Paw Creek, N. C., is making additions and alterations to its general offices at a cost of $14,000.

**Pee Dee No. 2 Mill,** Rockingham, N. C., installed 100 new looms last month.

**Sanford** (N. C.) **Cotton Mills** has erected a new weaving department and the work of re-arranging the machinery is underway.

**Sellers Mfg. Co.,** Saxapahaw, N. C., has awarded general contract to H. F. Mitchell, Jr., Burlington, N. C., for one-story addition, 100 x 200 ft., for expansion in spinning and carding divisions. It is estimated to cost close to $100,000, with equipment. H. V. Biberstein, Charlotte, N. C., is architect and engineer.

**Lola Mills, Inc.,** Stanley, N. C., has installed additional equipment including; Saco-Lowell slasher, Foster No. 75 winders, Universal multiple winders, three yarn drying units equipped with Grinnell unit heaters, and latest type package carriers for Gaston County Dyeing Machine equipment. This company also has recently installed new high-speed pressure filter plant by Hungerford & Terry, Inc., Clayton, N. J.

**Southern Mfg. Co.,** Tryon, N. C., plans erection of a 100 x 100 ft. addition and installation of five more Whitin quillers and a number of 102-Model winders.

**Wade Mfg. Co.,** Wadesboro, N. C., has installed 80 additional looms in a new building erected last year. It has also installed new cleaners for picker and napper rooms. Other new installations include a new dye plant unit.

**Springs Cotton Mills,** Gayle plant, Chester, S. C., has completed plans for a 50 x 100 ft., two-story addition to the main mill which will furnish employment to 100 additional workers, according to Capt. Elliott Springs, president. An addition to the sewing and cloth room is already under construction. Capt. Springs said an addition was also being constructed at the Kershaw unit, 50 x 50 ft., one-story, and one is completed at the Fort Mill unit.

**Graniteville** (S. C.) **Mfg. Co.** has installed 50 loom motors.

**Aiken Mills, Inc.,** Langley, S. C., plant, expects to resume operations at an early date, following the installation of 188 special Draper looms.

**Monarch Mills,** Lockhart, S. C., plant, are having their automatic spoolers equipped with the vacuum cleaning system, supplied by the Textile Shop, Spartanburg, S. C.

**Newberry** (S. C.) **Cotton Mill** has awarded contract to C. M. Guest & Sons, Anderson, for renovation of mill village at cost of $40,000.

**Brandon Corp.,** Woodruff, S. C., is having a vacuum cleaning system installed on its automatic spoolers, the work being done by Textile Shop, Spartanburg, S. C.

**Master Tuft Candlewick Corp.,** Chattanooga, Tenn., is installing equipment to increase capacity one-third, according to R. Blair Cannon.

**Elk Cotton Mills,** Fayetteville, Tenn., have approved plans for modernization and improvements in mill.

## *Cotton Financial Notes*

**Lowe Cotton Mill,** Huntsville, Ala., was recently purchased at auction sale by John P. Ames, operator of bag mills at Montgomery and Selma, but it will not be put into operation for some time.

**Rockfall Cotton Mills,** Middlefield, Conn., owned prior to last December by Russell Mfg. Co., Middletown, has been purchased by Col. Clarence S. Wadsworth from Paul S. Maier of Middletown.

**United Cotton Products Co.,** Fall River, Mass., plans rebuilding of portion of mill recently destroyed by fire.

**Goodyear Fabric Mill** has reopened its plant in New Bedford, Mass., after being closed for more than a year.

**Lamport Supply Co.,** New Bedford, Mass., is to take over the Butler Mill, now owned by the city. For several years the Lamport company has leased part of the State Pier.

**Stephens Spinning Co.** has taken 38,000 sq. ft. floor space (with more planned later) in the old Amoskeag Mills, Manchester, N. H.

**Whitbrook Fabrics, Inc.,** Long Island City, N. Y., have been organized with capital of 400 shares to operate a mill on upholstery fabrics. New company is headed by John Rosenbaum, 718 Main St., Boonton, N. J.

**Consolidated Textile Corp.,** New York, N. Y., Peter L. Olney, Jr., referee in bankruptcy, is considering an offer of $100,000 from L. A. Parker, Henderson, Ky., and associates, for purchase of mill at last noted place. Other Southern plants may also be sold.

**Gaston Mfg. Co.,** Cherryville, N. C., mill, recently leased by W. J. Woods and associates, has resumed operations, following a 2-year shutdown.

**Tabardrey Mfg. Co.,** Haw Creek, N. C., suffered loss of 300 bales of cotton in fire at its warehouse Mar. 1.

**Nelson Cotton Mill Co.,** Lenoir, N. C., acquired th property of the **Whitney Cotton Mill Co.,** also of Lenoir, by the exchange of capital stock, following approval of stockholders of the two corporations at special meetings, it was announced on March 20.

**Dacotah Cotton Mills,** Lexington, N. C., have been sold to John M. Moore and associates following competitive negotiations between this group and another. Operations are being resumed after 18 months idleness. C. L. Chandler has been elected president and Mr. Moore, secretary-treasurer.

**W. F. McCanless,** Salisbury, N. C., formerly manager at local mill of Klumac Cotton Mills, has secured portion of plant from the receiver, and will operate as a mill for the production of bed-spreads and kindred specialties.

**Chickasaw Thread Co.,** Shelby, N. C., on March 1, combined its offices and winding plant at the Carl Thompson Building on South Morgan Street, secured on lease with option to purchase.

**Drayton Mills,** Spartanburg, S. C., has filed petition for reorganization under Section 77B. The move will not affect operations and is for the purpose of rearranging its capital structure.

## *Wool Mill News*

**Merrimack Woolen Mills,** Dracut, Mass., are considering construction of new one-story mill addition, reported to cost over $40,000, with equipment. Company is operated by M. T. Stevens & Sons, North Andover, Mass.

**Oxford Mills,** No. Oxford, Mass., have moved into larger quarters.

**Pascagoula, Miss.**—Board of Municipal Supervisors is arranging a fund of $150,000 through bond issue, for construction of new local mill consisting of several one-story units, to be occupied under lease by a woolen company whose name is temporarily withheld.

**Lebanon Woolen Corp.** has purchased the long idle Everett-Norfolk mill properties in Lebanon, N. H. Mark Linenthal, Boston engineer, is surveying the properties and planning the new Lebanon Wool mill unit. Bernard Goldfine is interested.

**Cocheco Woolen Co.,** Rochester, N. H., has remodeled several departments, installed a new generator and new automatic looms.

**Gonic Mfg. Co.,** Rochester, N. H., has set up a new Babcock-Wilcox boiler to replace the four now in use. Cost was $60,000. It has also moved winders from the weave room to make way for new automatic looms.

**Albany** (N. Y.) **Felt Co.** has started construction of an addition, 300 x 90 ft. to be used for expansion.

**Chatham Mfg. Co.,** Winston-Salem, N. C., is constructing a new fireproof office building, 65x79 ft., of reinforced concrete, at an approximate cost of $30,000. It is also erecting a plant addition, 74x112 ft., for installation of 50 looms on first floor; spinning and carding on upper floors.

**Paragon Worsted Co.,** Providence, R. I., is completing a 2-story addition 40x50 ft. Contracts awarded are: General, Brien Bldg. Co., Woonsocket; electric, Electric Maintenance & Eng. Wks., Woonsocket; heating, Allen & Reed Inc., Providence; reinforcing, Truscon Steel Co., Providence; structural steel-iron, Providence Steel & Iron Co.; building finish, H. J. Chagnon, Woonsocket; painting, A. Plante, Jr., & Son, Providence.

**Argonne Worsted Co.,** Woonsocket, R. I., has awarded general contract to Lamoureaux Brothers, 546 Park Ave., Woonsocket, for new power house for service at mill. Cost close to $50,000, with equipment.

## *Wool Financial Notes*

**Bent Woolen Co.,** Cos Cob, Conn., is to be started up by H. G. Davenport through the **Davenport Process Co.** on custom woolen and worsted dyeing and finishing.

# Mill News

**Brick City Woolen Mill,** Chapel Street, Cherry Valley, Mass., formerly one of the mills of the Channing Smith Textile Co., has been sold by Israel Zelkind to a new corporation to be known as the **Peter Brook Woolen Mill** of which Gerald Rhodes of Worcester is treasurer. The new owners plan to open the mill shortly and give employment to about 150 hands. The mill has recently been operated by River Woolens, Inc.

**Botany Consolidated Mills, Inc.,** Passaic, N. J.—The Federal Court has signed an order allowing a total of $151,000 for attorneys and others who have recently carried out the reorganization of this company under the Federal bankruptcy act.

**Goodrich Rug Mfg. Co.,** Philadelphia, Pa., has filed notice of organization to operate a mill at 750 West Passyunk Ave. New company is headed by Barney D. Goodrich, 2434 Seventy-fifth Ave., West Oak Lane, Philadelphia.

**Toronto Carpet Mfg. Co., Ltd.,** Toronto, Ont., is perfecting plans for reorganization under an Ontario charter, to include a change in capitalization, with issuance of a 6% redeemable preferred stock and new 6% bonds.

## *Rayon and Silk Mill News*

**E. I. du Pont de Nemours & Co., Rayon Division,** Wilmington, Del., is considering construction of large mill in vicinity of Macon, Ga., where option has been taken on tract of land near south city limits. Preliminary surveys are under way for mill site. Plant will comprise several one and multi-story units, with power house, pumping plant and other mechanical structures, estimated to cost over $2,000,000.

**Brawer Brothers Silk Co.,** 8 Morris St., Paterson, N. J., has acquired the local William Strange Mill, totaling about 200,000 sq. ft. of floor space, and will use a portion of structure for expansion. The structure is now housing a number of silk and rayon companies. Title will be taken on May 1.

**Duplan Silk Corp.,** New York, N. Y., has plans for new mill near Grottoes, Va., comprising several units, estimated to cost close to $550,000, with equipment, to give employment to about 250. It is proposed to begin work early this spring.

**American Enka Corp.,** Enka, N. C., is completing installation of machinery in new addition in course of erection for several months, totaling about 100,000 sq. ft. of floor space, and will use for coning and other divisions. New unit is scheduled to be ready for operation before the close of April.

**Franklin Rayon Corp.,** Providence, R. I., has let contract for a one-story brick asbestos addition 30x75 ft. to cost $15,000. A. F. Smiley Construction Co., Pawtucket, is general contractor.

**Bristol (Tenn.) Industrial Corp.,** recently organized, has arranged for erection of a one-story mill on Eighteenth St., to be occupied by a rayon manufacturer, name temporarily withheld. It will cost over $60,000 and is scheduled to be ready for operation early in the fall. The Bristol Chamber of Commerce, W. A. Huddleston, secretary, is interested.

**Tennessee Eastman Corp.,** Kingsport, Tenn., is erecting a new three-story building, which will be known as the Employees' Building and will provide space for recreational purposes, including a cafeteria, basketball court, gymnasium, reading room, camera-club room, and a large room for group meetings.

**Albermarle Weaving Co.,** Charlottesville, Va., will erect an addition to cost $25,000. The contractor is H. M. Wilson.

**Aberfoyle, Inc.,** Norfolk, Va., recently formed as an interest of the Aberfoyle Mfg. Co., Chester, Pa., as reported last month, has awarded general contract to E. E. Waddle & Co., Board of Trade Building, Norfolk, for modernization and improvements.

**Virginia Rayon Mills, Inc.,** Orange, Va., plans a two-story structure, 120x70 ft. E. E. Burruss, of Charlottesville, is the architect.

**Viscose Corp. of Virginia,** Roanoke, Va., is awarding miscellaneous contracts for land grading, well-drilling and other work at site of new mill at Front Royal, Va., and will begin actual work on superstructure with 1000 men on the job early in May. A power plant will be built for mill service. Entire project will cost close to $1,000,000, with equipment. The first rayon unit will employ 6,000 and a second unit may be added later.

## *Rayon & Silk Financial Notes*

**West Coast Silk Co.** has been established at 742 South Hill St., Los Angeles, Calif., by D. W. Shapiro.

**Hartford Rayon Corp.,** Rocky Hill, Conn., has been chartered under Delaware laws, with capital of $932,400, to take over and operate company of same name with mill at Belamose Station.

**Burlington Mills Corp.** is a new Delaware corporation which has succeeded to the business of the North Carolina corporation of the same name. It has registered 198,800 shares of common with SEC and an offering to the public will be made through Lehman Bros., New York.

**Hawthorne Fabrics Co.,** Paterson, N. J., has been chartered with capital of $125,000, to operate a local silk and rayon mill. New company is represented by Harris J. Westerhoff, 5 Colt St., Paterson, attorney.

**Jacquard Fabrics, Inc.,** Paterson, N. J., has been organized with capital of 2500 shares to operate a mill. New company is represented by William B. Kaufman, 45 Church St., Paterson, attorney.

**North American Rayon Corp.,** New York, directors decided last month to declare interim dividends during the year on the company's common stocks in such amounts as warranted at the time, thus discontinuing the former policy of a regular dividend rate on the common.

**Lake Mills Corp.** has been incorporated in Oswego, N. Y., to engage in the manufacture and sale of outerwear and undergarments of wool, cotton or other materials. Stockholders are Thomas N. White, Oswego, N. Y.; Lucius L. Carr, Brightwaters, N. Y.; William J. Muldoon, Oswego, N. Y. Mr. White was formally general manager of the Oswego Rayon Co., now inactive, the building of which is now being used by the Lake Mills Corp., employing 125.

**Sylvania Industrial Corp.,** New York, manufacturer of transparent wrapping materials, with mill at Fredericksburg, Va., is considering the establishment of a new division for the production of short staple rayon.

**Burlington Mills,** Greensboro, N. C., have leased a portion of mill of Klumac Cotton Mills, Salisbury, N. C., comprising 84 looms and auxiliary equipment, and will operate as a branch plant, primarily for production of drapery fabrics. The Klumac property has been in receivership for a number of months. The remainder of the mill will be operated by W. F. McCanlass in making bedspreads.

**Hamlet Textile Co.,** Pawtucket, R. I., was the subject of a sale by Samuel T. Freeman & Co., Boston, auctioneers, on April 8. Machinery and equipment for broad silk and synthetic fabric manufacture was offered including 980 looms together with warpers, slashers, winders, shears, extractor, inspecting and measuring machines, motors, spare parts, mill supplies, etc.

## *Knitting Mill News*

**Crisp County Hosiery Mills,** Cordele, Ga., has begun operations in the manufacture of silk hosiery. The first unit of the $185,000 glass-brick and steel hosiery mill was put into operation March 23.

**Douglas Silk Products Co.,** Douglasville, Ga., has begun operations with over 45 on the pay roll. Hosiery is manufactured.

**Spotlight Hosiery Mill, Inc.,** Rome, Ga., has installed machinery and begun operations. It represents an investment of about $20,000; capacity is about 15,000 doz. pr. women's hosiery per month. The officers are Richmond Wollstein, president; N. N. Burnes, vice-president; Dewey H. Wollstein, secretary and treasurer.

**Corbin, Ky.**—Corbin Industrial Foundation, recently organized, is planning construction of one-story mill, to be leased and operated by a manufacturer of hosiery, name temporarily withheld. It is reported to cost close to $50,000.

**Worcester (Mass.) Knitting Co.** has leased the top floor of the Williams Bros. Mfg. Co. plant, South Glastonbury, Conn., and installed 40 machines for manufacture of bathing suits, sweaters and other knitted goods.

**Corinth (Miss.) Hosiery Mill** has almost completed installation of 20 new machines, additional to 23 formerly operated and will put them in service in a few weeks. The mill is a branch of the Meinig hosiery interests of Reading, Pa. It is planning the addition of a dyeing and finishing plant.

**Granite State Knitting Co.,** a new firm, has started operations on Merrimack Street, Manchester, N. H. The company, with $40,000 capital, is headed by Ralph L. Baggs, president. Richard C. Rockwell is treasurer and Ernest L. Levesque, general manager. The concern specializes in knit woolen gloves.

**Broadalbin (N. Y.) Knitting Co., Ltd.,** has concluded arrangements for acquisition of the plant of **Anniston (Ala.) Yarn Mills,** including adjoining tract of about 15 acres of land and mill village.

**Lombardi Knitcraft, Inc.,** has moved its plant to enlarged quarters in College Point, L. I., where manufacture of patented knitted fabrics for dresses and suits will be continued. This firm has given exclusive rights to the Continental Mills, Inc., Philadelphia, for manufacture of the knitted coatings made under the Lombardi methods and a Lombardi department was established in the Continental Mills, Inc., for that purpose.

**Van Raalte Co., Inc.,** Dunkirk, N. Y., will this month begin one-story addition, 65 x 170 ft., estimated to cost about $80,000. Mortimer J. Murphy, Curtiss Building, Buffalo, N. Y., is architect.

**Gouverneur (N. Y.) Hosiery Mills** plans to remodel a section of its mill for installation of 30 additional machines.

**Kay Dunhill Co., Inc.,** Mechanicville, N. Y., a new concern, has started production of women's knitted sportswear in a leased plant.

**Interstate Hosiery Mills, Inc.,** New York, N. Y., have acquired the plants of the Hancock Knitting Mills, Hancock and Westmoreland Sts., and John Bromley Mills, Lehigh Ave., both Philadelphia, Pa., and will improve and occupy at once as branch plants.

**Tubize-Chatillon Corp.,** New York, N. Y., is considering enlargements in branch knitting mill at Hopewell, Va., now being used exclusively for that purpose, with installation of additional machinery for increased output.

**Perry (N. Y.) Knitting Co.,** has resumed operations at branch mill at Mount Morris, N. Y., closed for a number of years and equipment removed to Perry mill. Machinery and equipment have been installed.

**Frank Campbell, A. C. Black** and others have begun operation of a new hosiery mill, housed in the Campbell Building at East Maiden, N. C.

**Asher Hosiery Mills,** Graham, N. C., recently organized by David L. Asher and George E. Brummitt to dye and finish men's and women's hosiery, now has 35 employees on its payroll.

**Knott Hosiery Mill,** Hickory, N. C., has been opened by C. W. Knott. The plant opened with 45 machines.

**Marion (N. C.) Knitting Mills,** manufacturers of men's half hose, has installed new automatic knitting machines to replace 60 of the older models, thus increasing output from 1,800 to 2,000 doz. pr. per day. Three new Fidelity four-feed automatic ribbers have also been added. Additional space for the looper division has been provided by the addition of a one-story office building, 20x40 ft.

**Imperial Hosiery Mill,** Mocksville, N. C., has begun operations with 52 automatic machines. Men's hose are being manufactured. The incorporators are: Dr. S. A. Hardin, president; Knox Johnstone, vice-president, and S. S. Short, secretary-treasurer and general manager. The company has been incorporated for $100,000.

**Jac Feinberg Hosiery Mill, Inc.,** Rock Hill, N. C., has work under way on installation of new high-speed, full-fashioned hosiery machines to provide increase in capacity and addition of 100 to payroll.

**Clark Knitting Co., Inc.,** Rutherfordton, N. C., recently started installing 12 additional machines.

ADVERTISING PAGES REMOVED

Men's cotton and rayon half hose are made. George Clark is president.

**Hanes Hosiery Mills,** Winston-Salem, N. C., said to be the largest seamless mill in the world, announced March 10, plans for the construction of a $75,000 two-story addition, which will join the present plant building.

**George S. Haddad,** Philadelphia, Pa., has awarded contracts for construction of a one-story silk hosiery plant in Ash St., Johnstown, Pa., to be 60x112 ft.

**Lee I. Robinson Hosiery Mills, Inc.,** Philadelphia, Pa., have leased a one-story mill to be constructed at Dublin, Pa., by the Dublin Improvement Association. It will comprise a main plant unit, 85x120 ft., with boiler house, 17x23 ft., estimated to cost over $60,000, with equipment. Ballinger Co., Philadelphia, is architect and engineer.

**Joseph & Forrest Berry** of Spring City, Pa., have leased a floor in the former Perseverance Knitting Mill, Phoenixville, and have installed three f.f. knitting machines. Others will be added.

**Harriman (Tenn.) Hosiery Mills** have installed new seaming machines.

**Rex Knitting Mills,** LaFollette, Tenn., has begun operations, with fifty workers. The number will be gradually increased to 150. About 2,500 doz. pr. of crinkle top anklets will be turned out daily.

**Ellis Carter Hosiery Mill,** So. Pittsburgh, Tenn., is the new mill to be operated by Henry Ellis and R. R. Carter, and will manufacture anklets and men's half hose.

**Christopher Shelby,** San Antonio Public Service Co., San Antonio, Tex., is interested in a project to construct and operate a large hosiery mill on a site at New Braunfels, Tex. Plant will comprise several one-story units and is estimated to cost over $300,000, with machinery. Work is scheduled to begin soon.

**Roanoke (Va.) Mills, Inc.,** recently organized with capital of $200,000, as an interest of Henry J. Tully & Co., 346 Broadway, New York, N. Y., has acquired the Athena Knitting Mills, formerly controlled by Marshall Field & Co., and will operate. Improvements will be made and mill developed for maximum capacity. Henry J. Tully heads the new company. Ralph R. Jones is resident manager.

**Zwicker Knitting Mills,** Appleton, Wis., have begun superstructure for three-story addition to mill, 96x100 ft., for which general contract was let recently to the Fluor Brothers Construction Co., Oshkosh, Wis. Cost over $60,000, with equipment. Orbison & Orbison, Appleton, Wis., are architects and engineers.

## *Knitting Financial Notes*

**Curtice Rankin,** care of Chamber of Commerce, Russellville, Ark., E. W. Hogan, secretary, is concluding negotiations with that organization for local site for establishment of a new hosiery mill, to be equipped with about 50 machines at start. It will cost over $50,000.

**F. R. Knitting Mills, Inc.,** 69 Alden St., Fall River, Mass., have been organized with capital of 100 shares of stock, to operate a local mill. Frank Reitzas is president and treasurer.

**A. H. S. and Junior College,** Laurel, Miss., has leased about $300,000 worth of machinery from the Vertex Hosiery Mill of Pittsburgh, Pa., and about March 1 began the operations of a new vocational hosiery mill in connection with the college.

**Pertex Hosiery Mills,** Maple Shade, N. J., have been organized with capital of $75,000 preferred and $50,000 common. They will operate the former Maple Shade Hosiery Mill. Samuel B. Fortenbaugh, Jr., Maple Shade, is company representative.

**Wellesley Knitting Mills, Inc.,** New York, N. Y., have been organized to operate a local mill. New company is represented by Albert A. Weinstein, 450 Seventh Ave., New York, attorney.

**Klex-Knit Mill,** Brookford, N. C., recently organized, will operate the local mill heretofore under the ownership of the **Whitener Hosiery Mill, Inc.,** chartered last year. A substantial interest in the company has been acquired by E. G. Ballenger, Jr., Hickory, N. C., who will be a principal official of new company. Other officials are C. H. Henderson and T. Manly Whitener.

# *Mill News*

**Liberty (N. C.) Hosiery Mill** is being moved from Liberty to Silver City, N. C.

**John Haynesworth Hosiery Mills,** Connelly Springs, N. C., were completely destroyed by fire March 21.

**Triangle Hosiery Mills** have been organized in Philadelphia, Pa., with headquarters at 6429 Hefferman St., by Tulio Mignogna, Mario Mignogna and Michael Centani.

**Pioneer Knitting Mills,** Plymouth, Pa., one-time major hosiery manufacturing concern, resumed operations March 29, after five-years' idleness. Albert West, son of Ambrose West, former owner, has been named production manager.

**Kayser Silk Glove Mill,** Portland, Pa., will be closed and its machinery consolidated with the company's plant at Bangor, Pa.

**Rex Hosiery Co.,** LaFollette, Tenn., is establishing a new hosiery mill.

**Gilbreath Mfg. Co.,** knitted underwear, has moved from Columbus, Texas to Waco, Texas.

**New Industries Committee of Chamber of Commerce,** Lawrenceville, Va., C. W. Peebles, chairman, is concluding negotiations with a hosiery manufacturer (name temporarily withheld) for construction of one-story local mill.

## *Processing Plant News*

**Glasco (Conn.) Finishing Co.** has filed plans for a new boiler house from plans by Jenks & Ballou, Providence, R. I. The work will be done this month.

**Millbank, Inc.,** Passaic, N. J. is beginning operations at 35 8th St. on lacquer and metallic printing. New machinery is in place. J. P. Hogerty is president; Michael Cavallo, general manager; James Hyslop superintendent of printing.

## Earnings Statements

The following summarizes recent mill financial statements showing 1936 net earnings compared with 1935. Date indicates end of fiscal year; where none is given it is same as calendar year; minus signs mean loss instead of profit.

| | 1936 | 1935 |
|---|---|---|
| *Cotton Mills* | | |
| Cannon Mills Co., Kannapolis, N. C. | $4,275,558 | $3,271,588 |
| York Mfg. Co., Saco, Me. | 17,399 | —173,362 |
| Mt. Vernon-Woodberry Mills, Baltimore | 653,108 | 174,012 |
| Gosnold Mills, New Bedford | 201,592 | 172,000 |
| Hamilton Cotton Co., Toronto | 109,137 | 85,842 |
| Montreal Cottons, Ltd., Montreal | 405,407 | 244,987 |
| Cosmos Imperial Mills, Hamilton Ont. | 173,808 | 190,496 |
| *Knitting Mills* | | |
| Adams-Millis Corp., High Point, N. C. | 500,254 | 556,864 |
| Davenport Hosiery Mills | 183,034 | 130,184 |
| Durham Hosiery Mills, Durham, N. C. | 70,942 | —76,093 |
| Brown Durrell Co., New York | —138,240 | —178,178 |
| Utica Knitting Mills, Utica | 285,919 | 118,153 |
| Robert Reis & Co., New York | 50,247 | —24,442 |
| May Hosiery Mills (6 mths. to Feb. 26, 1937) | 239,061 | 128,481 |
| Zimmerknit Co., Ltd., Montreal | 42,179 | 19,260 |
| Stanfields, Ltd., Montreal | 160,785 | 135,043 |
| Regent Knitting Mills, Montreal | 77,283 | 10,462 |
| Mercury Mills, Montreal | —21,357 | —46,036 |
| *Rayon and Silk Mills* | | |
| Burlington Mills Corp., Burlington, N. C. | 991,266 | 1,119,942 |
| North American Rayon Corp. | 1,959,710 | 906,911 |
| American Bemberg Corp. | 598,161 | —491,710 |
| Franklin Rayon Co., Providence | 185,360 | 126,510 |
| Canadian Celanese, Ltd. | 1,519,504 | 1,602,960 |
| Skenandoa Rayon Corp. | 94,920 | —82,072 |
| Century Ribbon Mills | 155,091 | 5,522 |
| *Finishing Companies* | | |
| United States Finishing Co. | —686,771 | —796,326 |
| J. Bancroft & Sons | 158,570 | —159,894 |
| *Miscellaneous Concerns* | | |
| American Hair & Felt Co. | 461,920 | 393,352 |
| William Whitman Co. | 341,000 | 203,855 |
| Ludlow Mfg. Associates | 1,918,845 | 1,509,045 |
| Allied Chemical & Dye Corp. | 25,323,834 | 21,701,275 |
| Sylvania Industrial Corp. | 1,161,559 | 971,504 |

**Ajax Weaving & Converting Corp.,** 241 West 37th St., New York, has leased space in building at 242 West 38th St., and will occupy for expansion.

**Southern Mercerizing Co., Inc.,** Tryon, N. C., announced sometime ago plans for the installation of five additional Whitin quillers and a number of 102-model winders. A new building to house the equipment will be constructed and will measure 100x100 ft.

**Easton (Pa.) Dye Works, Inc.,** plans erection of a water treatment plant to purify its waste now being emptied into the Lehigh River. The State recently obtained an injunction restraining the company from polluting the river.

**Electric City Dyeing Co.,** Scranton, Pa., has awarded contracts for construction of a new plant at 509 Glenn St. Plans provide for a one-story unit, 58x85 ft. Machinery and equipment from the present plant at 1550 Dickson Ave., will be installed in the new building.

**Rhode Island Piece Dye Works, Inc.,** Central Falls, R. I., has been organized and is now operating at 4 Cross St. A. J. Blain is president, Fernand Thomas vice-president and J. A. St. George, secretary-treasurer. Frank Carteron represents the firm in New York.

**Rock Hill (S. C.) Printing & Finishing Co.** has begun construction of a boiler room addition which with a new 750 hp. boiler to be installed will be made at a total outlay of approximately $70,000.

**Fontaine Converting Works, Inc.,** Martinsville, Va., has purchased additional machinery in order that production may be increased. This was formerly the **Powhatan Converting Works, Inc.,** but recently changed its name.

## *Processing Financial Notes*

**Safetex Co., Inc.,** 65½ Riverdale Av., East Portchester, Conn., has organized listing the following officers: President and assistant treasurer, Raymond Healy, White Plains, N. Y.; secretary, Alvah G. Sleeper, West Somerville, Mass.; and treasurer, Claude H. Daniels, Wellesley Hills, Mass.

**D. Mackintosh & Sons,** Holyoke, Mass., textile dyeing establishment, has increased the working force about 50% since the beginning of the year.

**Inter-State Dyeing & Finishing Corp.,** Paterson, N. J., has been organized with capital of 2500 shares, to operate a local dye and finishing mill. New company is represented by Louis C. Rosenthal, 113 Ellison St., Paterson, attorney.

**James Print Works, Inc.,** Paterson, N. J., has formed with capital of $25,000 to operate a local dye and print mill. New company is represented by Emanuel Shavick, 140 Market St., Paterson, attorney.

**A. J. Paillard Dye Works, Inc.,** Paterson, N. J., has begun operations in the plant formerly occupied by the Florence Dye Works. For the last 20 years Mr. Paillard was associated with the late Dr. Max Imhoff, first with the Imhoff-Berg Works and then the Imhoff-Paillard Works. Associated with Mr. Paillard now are Edward Yzewyn, vice-president and Mario Plescia, treasurer.

**Veteran Piece Dyeing & Finishing Co., Inc.,** Paterson, N. J., has been organized with capital of $125,000, to operate a local mill. New company is represented by James Catania, 93 Lincoln St., Passaic, N. J.

**E & W Dyeing Corp.,** Brooklyn, N. Y., has bought the plant of the **Garino & Sons Dyeing Co.,** Paterson. It was not announced when the new firm will occupy the plant.

## *Miscellaneous Mill News*

**Lhasa Fabrics, Inc.,** Los Angeles, Calif., has been organized with capital stock of $3,000. Directors are: Joseph I. and A. H. Schnitzer, Harry Garson, Thomas H. Work and Berna Doty, all of Los Angeles. The concern is represented by Loeb, Walker & Loeb, attorneys, 523 West Sixth Street, Los Angeles.

**Spaulding Fiber Co.** is having a new dryer installed at its South Milton (N. H.) plant. C. J. Merrill, Inc., of Portland, Me., the manufacturer, is making the installation. Spaulding suffered $10,000 damage by fire at its No. Rochester, N. H. plant recently.

**Linen Thread Co., Inc.,** 418 Grand St., Paterson, N. J., is considering erection of one-story mill, 175x370 ft., on land recently acquired on Belgrove Drive, estimated to cost in excess of $75,000.